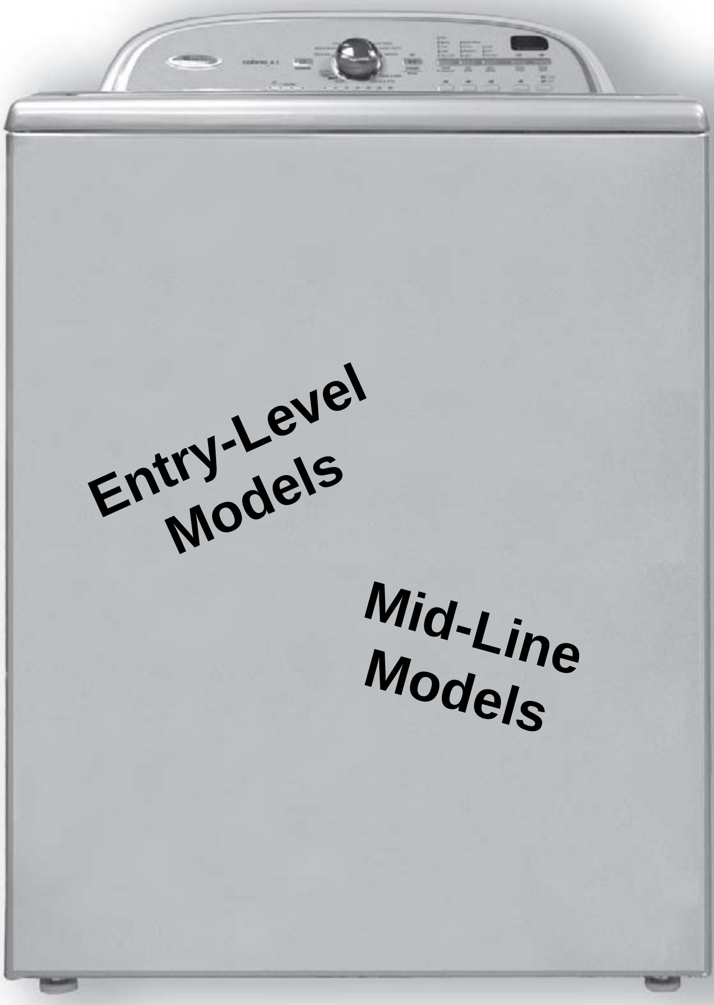
New Modular Vertical Washer

Product Introduction


Entry-Level
Models
Mid-Line
Models

VMW Whirlpool Mid-Line

Content subject to change

Model Number	WTW5500XW	WTW5600XW	WTW5700XW
Volume	148,561	44,614	41,613
Color Volume	20,879		8,206
Produc[illegible]	[illegible]10	04/26/10	04/26/10
2011 D[illegible]	[illegible]	Yes	Yes
DOE Ca[illegible]	[illegible]	3.7	3.7
IEC Cap[illegible]	[illegible]	4.3	4.3
Energy[illegible]	[illegible].5 WF	2.2 MEF, 4.5 WF	2.2 MEF, 4.5 WF
Basket Material	Stainless Steel	Stainless Steel	Stainless Steel
Bleach Disp.	Dump Bleach	Dump Bleach	Dump Bleach
Fab. Sof. Disp.	Timed Flush-Drawer	Timed Flush-Drawer	Timed Flush-Drawer
Detergent Disp.	Drawer	Drawer	Drawer
Lid	Solid	Solid	Window
Top	Extra Wide Open Metal	Extra Wide Open Metal	Extra Wide Open Metal
Water Temps	4	5	5
Soil Level	4	4	4
Water Levels	Auto	Auto	Auto
Spin Speeds	3 N,L,H	3 N,L,H	3 N,L,H
Combinations	-	-	-
Max Spin Speed	800	800	800
Extra Rinse Switch	Extra Rinse/Fab Softener	Extra Rinse/Fab Softener	Extra Rinse/Fab Softener
Agitator or Impeller	Impeller-Unique	Impeller-Unique	Impeller-Unique
# of Encoder Positions/Cycles	9	11	11
# of Custom Options	13	17	20
Allergen Cycle	No	No	No
Eco Normal/Boost	No	Eco Boost	Eco Boost
PreSoak Option	No	PreSoak Option	PreSoak Option
Deep Clean Option	No	No	Deep Clean Option
Soak Only Cycle	No	Soak Only Cycle	Soak Only Cycle
UI, LED Color	Rotary Electronic, Green	Rotary Electronic, Green	Rotary Electronic, Green
2 Digit, 7 Seg Disp, no error codes	No	7 Seg Display	7 Seg Disp w/Delay
Eco Monitor	No	Eco Monitor	Eco Monitor
End Of Cycle Signal	No	On / Off	Off / Low / High
Quiet Wash	No	Quiet Wash	Quiet Wash
Color / Chrome	Color / Satin Chrome	Satin Chrome	Color / Satin Chrome
Productivity	Quick Cycle	Quick Cycle	Quick Cycle

VMW Maytag Mid-Line

Content subject to change

Model Number	MVWX500XW	MVWX600XW	MVWX700XW
Volume	124,457	41,332	20,533
Color Volume	16,002		5,129
Production		05/31/10	05/31/10
2011 DOE		Yes	Yes
DOE Capa		3.7	3.7
IEC Capaci		4.3	4.3
Energy Sta	WF	2.2 MEF, 4.5 WF	2.2 MEF, 4.5 WF
Basket Ma	Stainless Steel	Stainless Steel	Stainless Steel
Bleach Disp.	Dump Bleach	Dump Bleach	Dump Bleach
Fab. Sof. Disp.	Drawer	Drawer	Drawer
Detergent Disp.	Drawer	Drawer	Drawer
Oxi Disp.	No	No	No
Lid	Solid	Solid	Window
Top	NEW X/Wide Open Metal	NEW X/Wide Open Metal	NEW X/Wide Open Metal
Water Temps	4	5	5
Soil Level	3	4	5
Water Levels	Auto	Auto	Auto
Spin Speed	3 N,L,H	3 N,L,H	3 N,L,H
Combinations			
Max Spin Speed	800	800	800
Extra Rinse Switch	Extra Rinse	Extra Rinse	Extra Rinse
Agitator or Impeller	Impeller-Unique	Impeller-Unique	Impeller-Unique
# of Encoder Pos./Cycles	8	10	11
# of Custom Options	12	15	18
Allergen Cycle	No	No	Allergen
Soak Only Cycle	No	Soak Only Cycle	Soak Only Cycle
Deep Clean Option	No	Deep Clean	Deep Clean
Power Wash	No	Power Wash	Power Wash
PreWash Option	No	No	Prewash
UI, LED Color	Rotary Elect, Amber	Rotary Elect, Amber	Rotary Elect, Amber
2 Digit, 7 Seg Disp, no error codes	No	2 Digit, 7 Seg Disp	2 Digit, 7 Seg Disp
End Of Cycle Signal	No	No	Off / Low / High
Quiet Series	No	Quiet Series 1	Quiet Series 1
Color / Chrome Accents	Color / Satin Chrome	Satin Chrome	Color / Satin Chrome
MCT	Yes	Yes	Yes

VMW Whirlpool Entry-Level

Content subject to change

Model Number	WTW4800XQ	WTW4900XW	WTW4950XW
Volume	267,025	132,471	153,496
Color Volume			
Produc[illegible]	[illegible]0	09/06/10	09/06/10
2011 D[illegible]	[illegible]	Yes	Yes
DOE Ca[illegible]	[illegible]	3.5	3.7
IEC Cap[illegible]	[illegible]	No	4.3
Energy[illegible]	[illegible]1	Meet 2011	2.2 MEF, 4.5 WF
Basket Material	White Porcelain	White Porcelain	Stainless Steel
Bleach Disp.	Dump Bleach	Dump Bleach	Dump Bleach
Fab. Sof. Disp.	Agi w/ER	Agi w/ER	Downey Ball
Detergent Disp.	No	No	No
Lid	Solid	Solid	Solid
Top	Standard Metal	Wide Open Metal	Wide Open Metal
Water Temps	4	4	4
Soil Level	3 (in timer)	4 (in timer)	4 (in timer)
Water Levels	4 Manual	5 Manual	Auto
Spin Speeds	2 L,H	2 L,H	2 L,H
Combinations	-	-	-
Max Spin Speed	700	700	800
Extra Rinse Switch	Ex Rinse/Fab Softener	Ex Rinse/Fab Softener	Ex Rinse/Fab Softener
Agitator or Impeller	Current Dual Action	Current Dual Action	Impeller-Unique
# of Encoder Positions/Cycles	8	11	[illegible]
# of Custom Options	12	13	9
Allergen Cycle	No	No	No
Eco Normal/Boost	No	No	EcoBoost
PreSoak Option	No	No	No
Deep Clean Option	No	No	No
Soak Only Cycle	No	Soak Only Cycle	Soak Only Cycle
UI, LED Color	E/M Rotary Electronic	E/M Rotary Electronic	E/M Rotary Electronic
2 Digit, 7 Seg Disp, no error codes	No	No	No
Eco Monitor	No	No	No
End Of Cycle Signal	No	No	No
Quiet Wash	No	No	No
Color / Chrome	No	No	No
Productivity	Message	Quick Cycle	Quick Cycle

VMW Maytag Entry-Level

Content subject to change

Model Number	MVWC200XW	MVWC300XW	MVWC350X
Volume	237,393	97,442	
Color Volume			
Pro	2010	10/04/10	
201	s	Yes	
DO	3	3.5	
IEC	o	No	
Ene	2011	Meet 2011	
Basket Material	White Porcelain	Titanium Porcelain	
Bleach Disp.	Dump Bleach	Dump Bleach	
Fab. Sof. Disp.	Agi	Agi w/ER	
Detergent Disp.	No	No	
Oxi Disp.	No	No	
Lid	Solid	Solid	
Top	Bullnose WO Metal	Bullnose WO Metal	
Water Temps	4	4	
Soil Level	3 (in timer)	3 (in timer)	
Water Levels	4 Manual	5 Manual	
Spin Speed	2 L,H	2 L,H	
Combinations			
Max Spin Speed	700	700	
Extra Rinse Switch	No	Extra Rinse	
Agitator or Impeller	Current Dual Action	Current Dual Action	
# of Encoder Pos./Cycles	8	10	
# of Custom Options	10	13	
Allergen Cycle	No	No	
Soak Only Cycle	No	No	
Deep Clean Option	No	No	
Power Wash	No	No	
PreWash Option	No	No	
UI, LED Color	E/M Rotary Electronic	E/M Rotary Electronic	
2 Digit, 7 Seg Disp, no error codes	No	No	
End Of Cycle Signal	No	No	
Quiet Series	No	No	
Color / Chrome Accents	No	No	
MCT	Yes	Yes	

Design

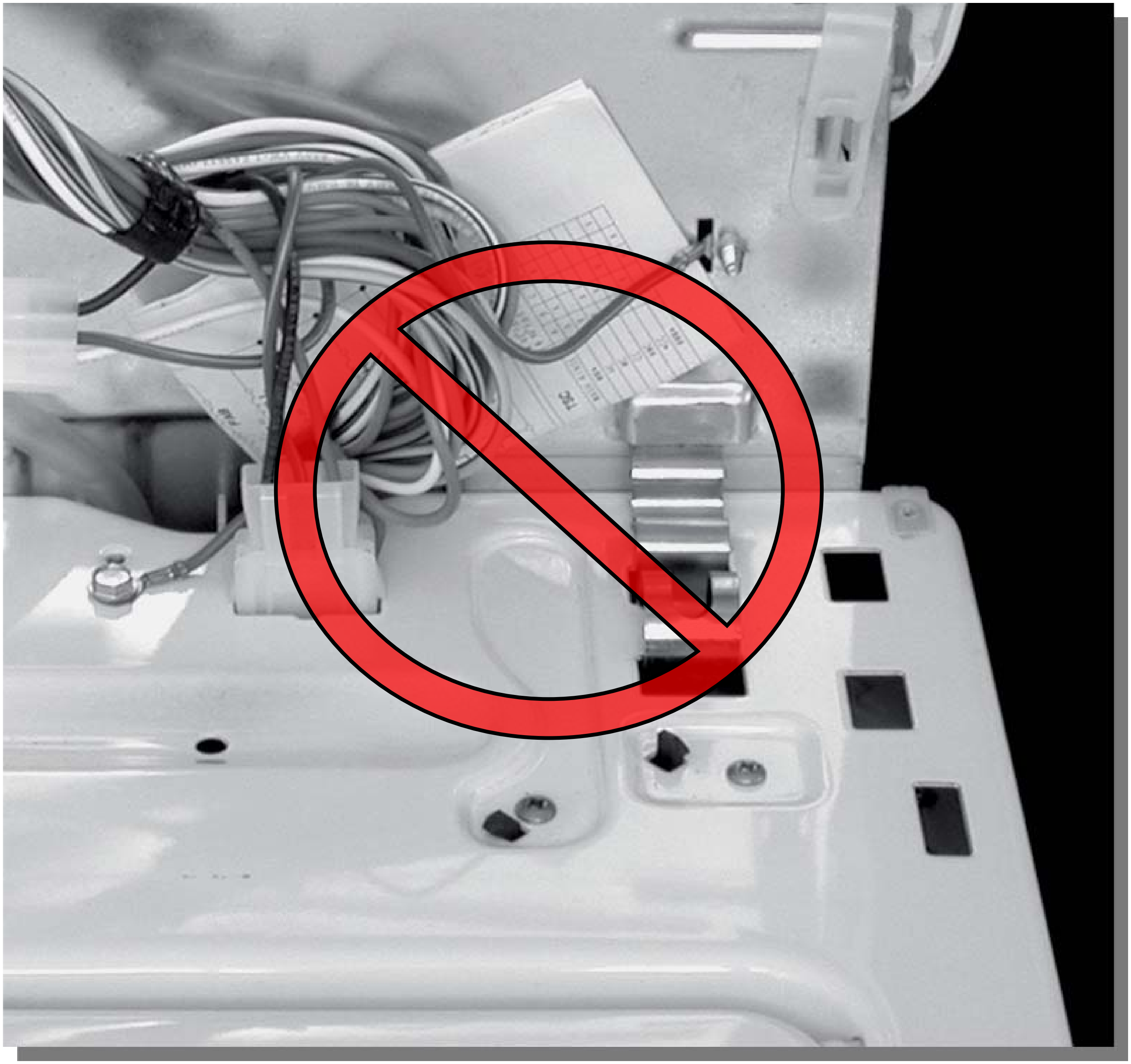
- Simple to service
- Designed with the technician in mind
- Engineering invested in service
- Very early testing
- Robust Control Design
  - Robust parts chosen
  - Improved RAST connectors
  - Conformal coating
  - Root Cause software
  - “Limp-along” modes
  - Bottom Line = Built in Durability

Cabinet and ~~Rear Panel~~



Direct Drive Cabinet with permanent rear braces





Hung Suspension
equals
Very Stable Platform

- Higher Spin Speeds
- Reduced Vibration





Basket
does not float

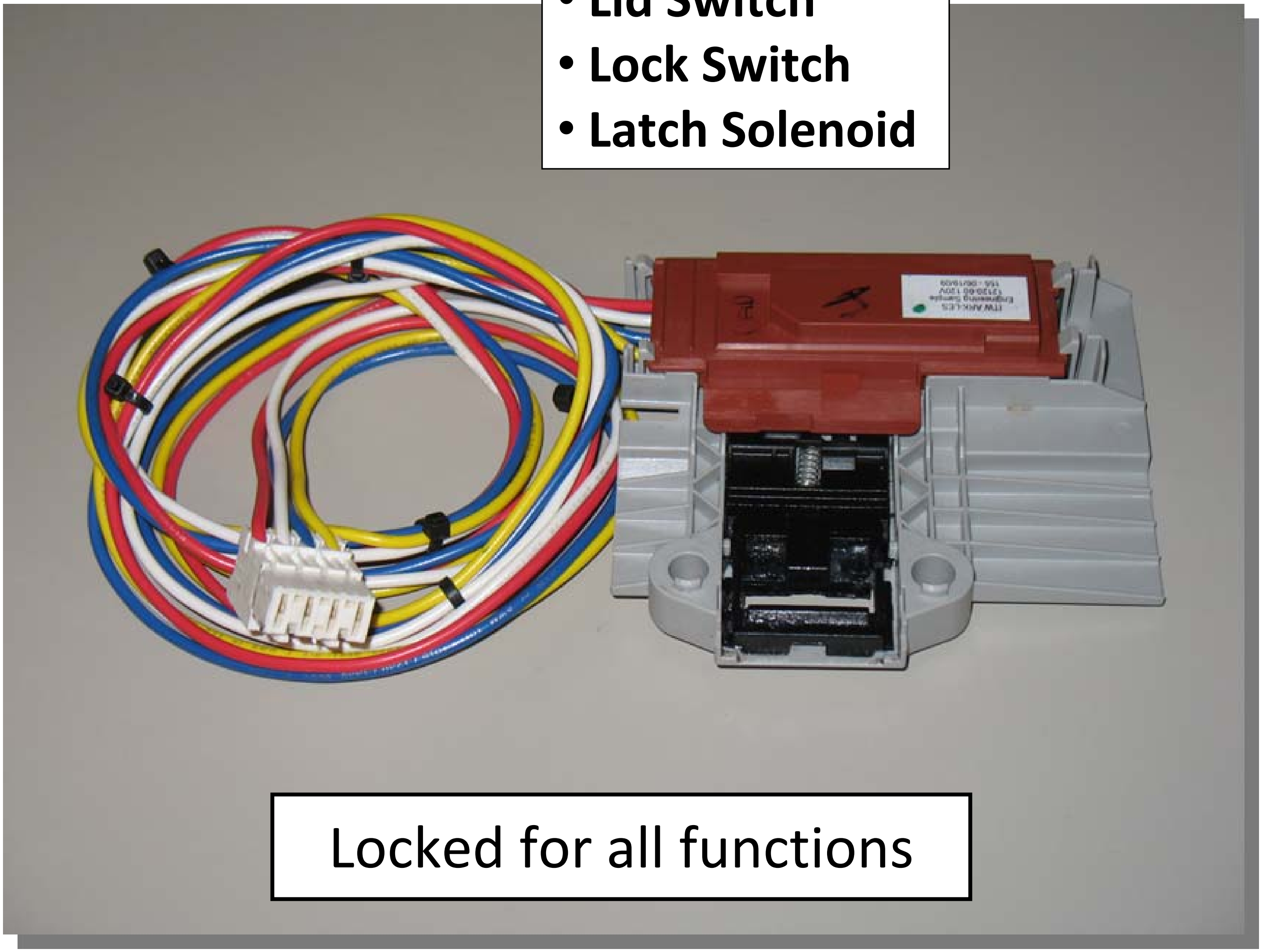


WP Part # 14218862

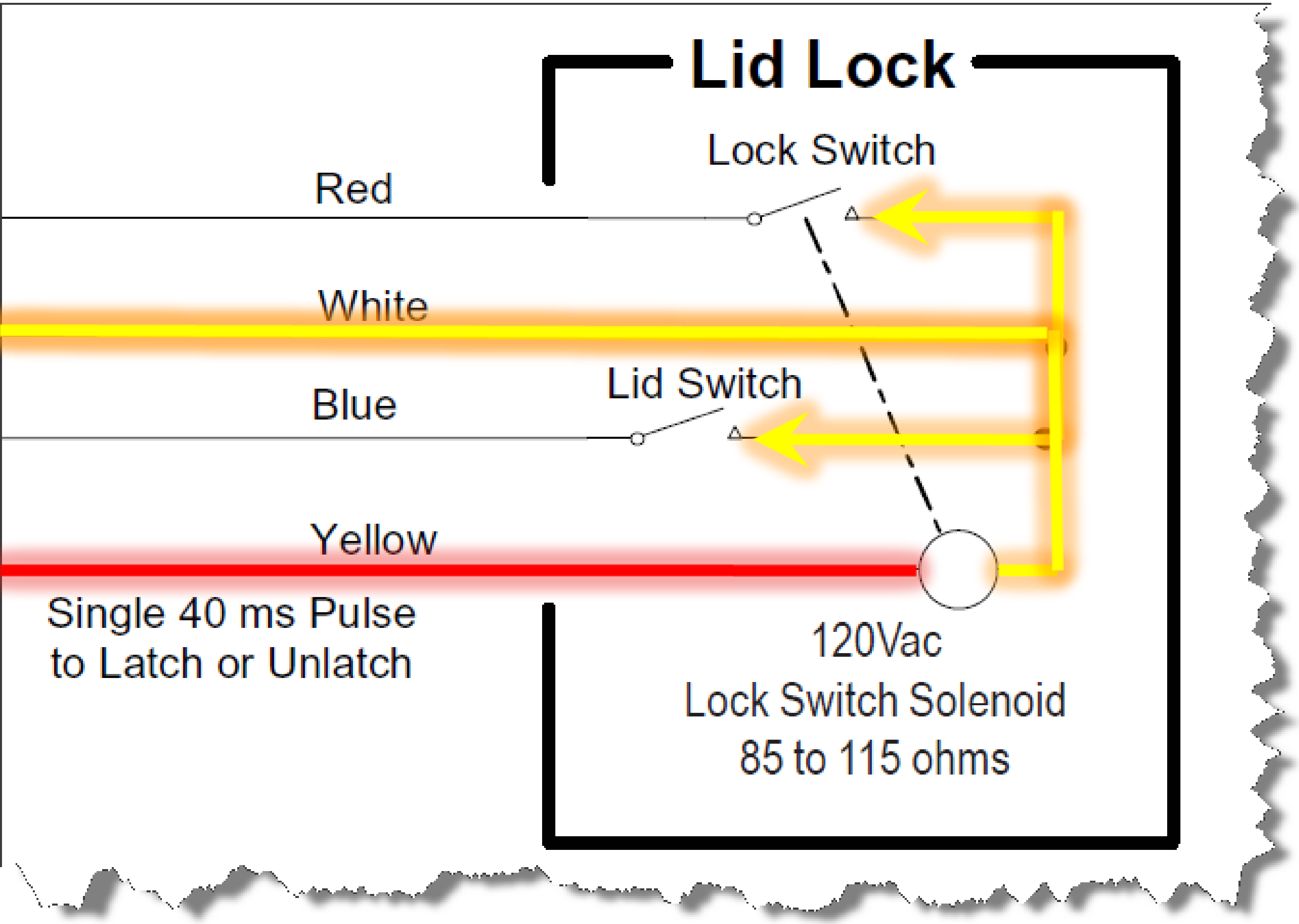


No Brake.

- **Lid Switch**
- **Lock Switch**
- **Latch Solenoid**

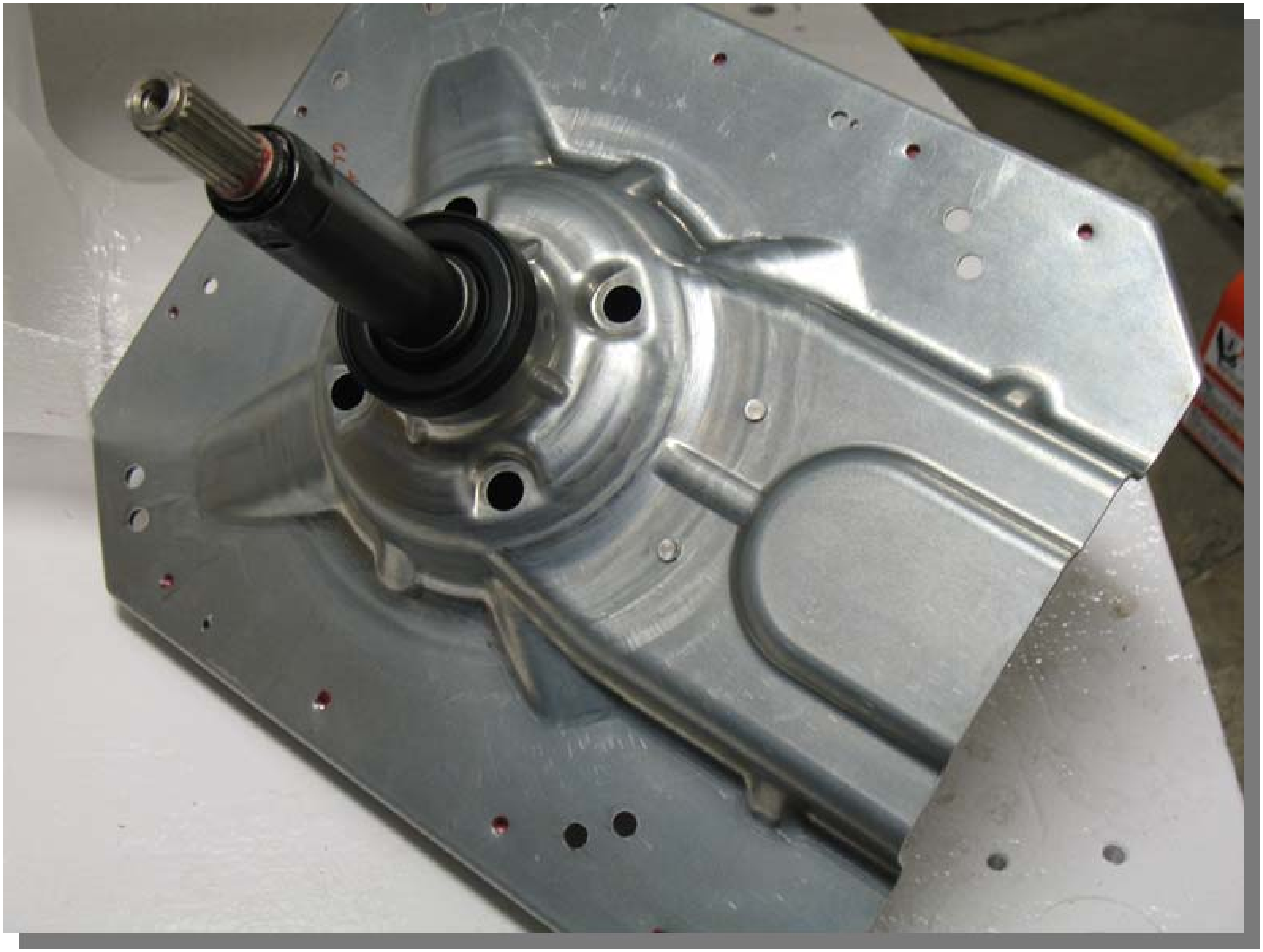


Locked for all functions


Lid Lock
Lock Switch
Red
White
Blue
Lid Switch
Yellow
Single 40 ms Pulse
to Latch or Unlatch
120Vac
Lock Switch Solenoid
85 to 115 ohms

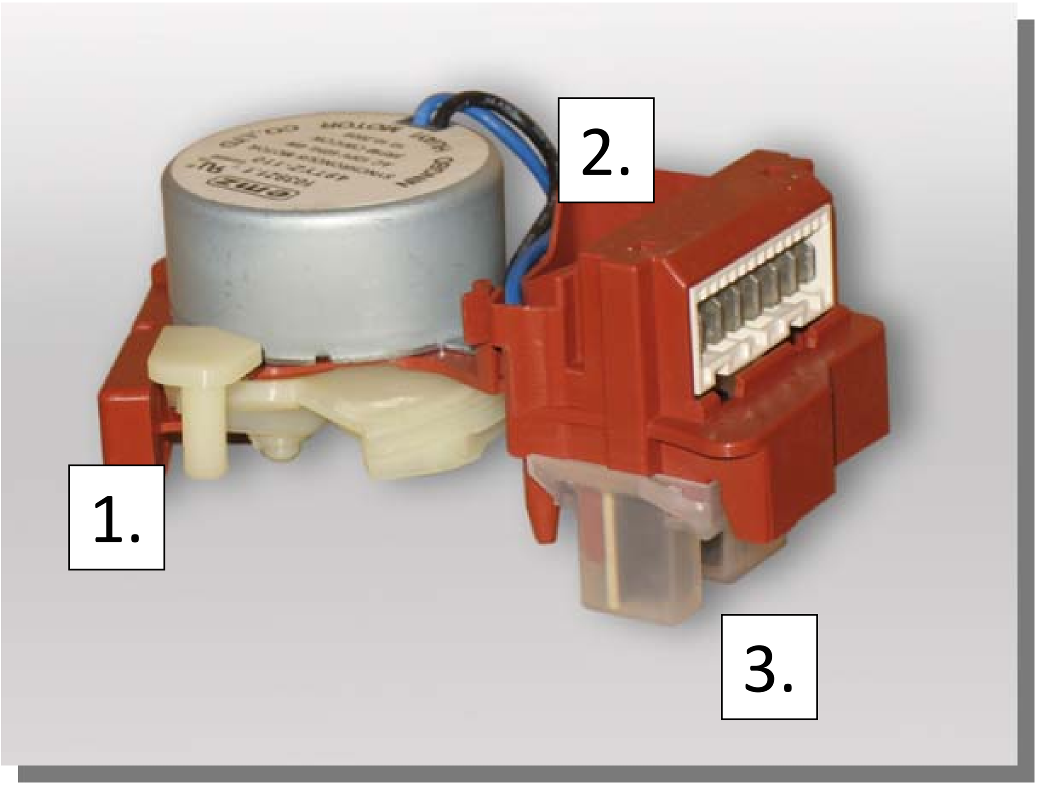
Drive System

- 4 – bolts (mm)
- With/without attachments
- Drain pump

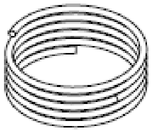


Shifter

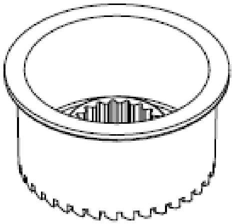
1. Shifts from Agitate to Spin
2. Monitors the Positon
3. Monitors Motor RPM



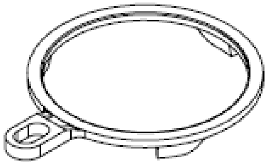
Modified Splutch



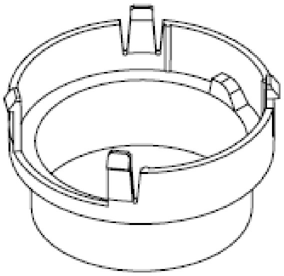
Spring



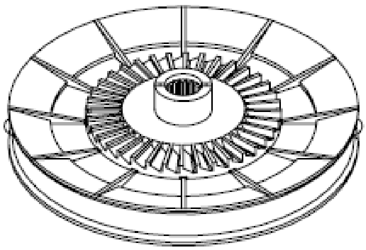
Basket Drive Gear
Inner splines - connect to transmission (and basket)
Outer teeth - connect to pulley



Cam Ring



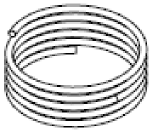
Housing



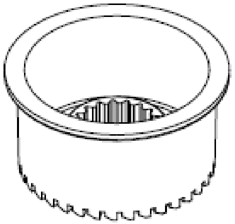
Pulley
Inner splines - connect to agitator shaft
Outer teeth - connect to Basket Drive Gear

- Polished Surfaces
- Improved Gear Mesh
- No Brake
- Quiet Shifter
- Higher Shifter Force

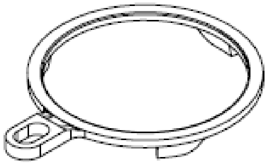
Modified Splutch



Spring

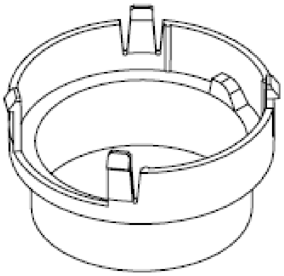


Basket Drive Gear
Inner splines - connect to transmission (and basket)
Outer teeth - connect to pulley

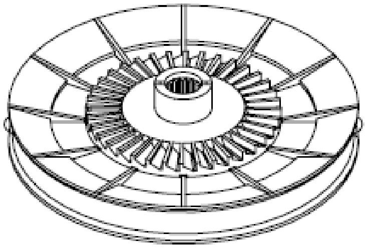


Cam Ring

- Parts work/wear together
- Only available as kit
- Replace all parts
- Grease gearcase spline

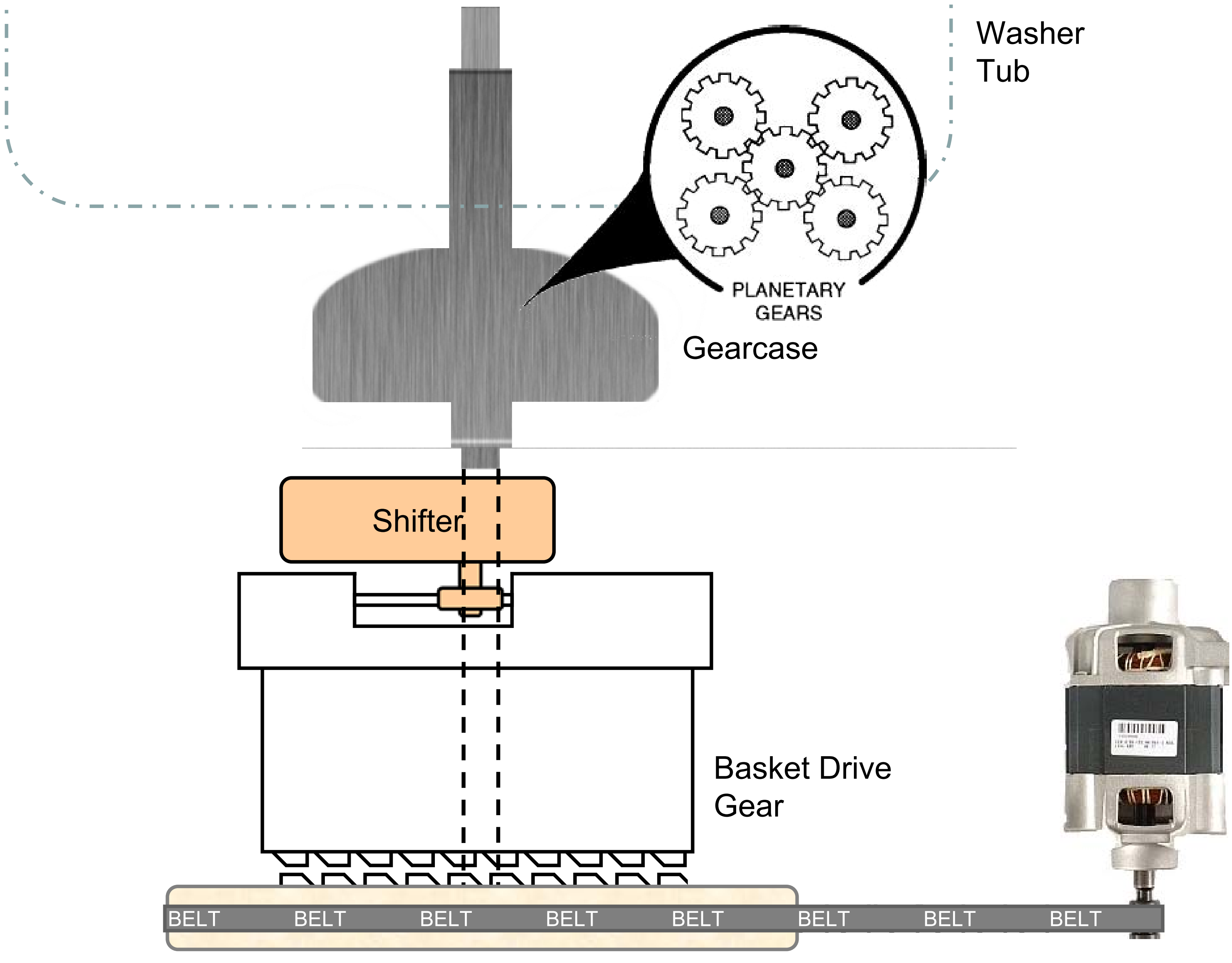


Housing

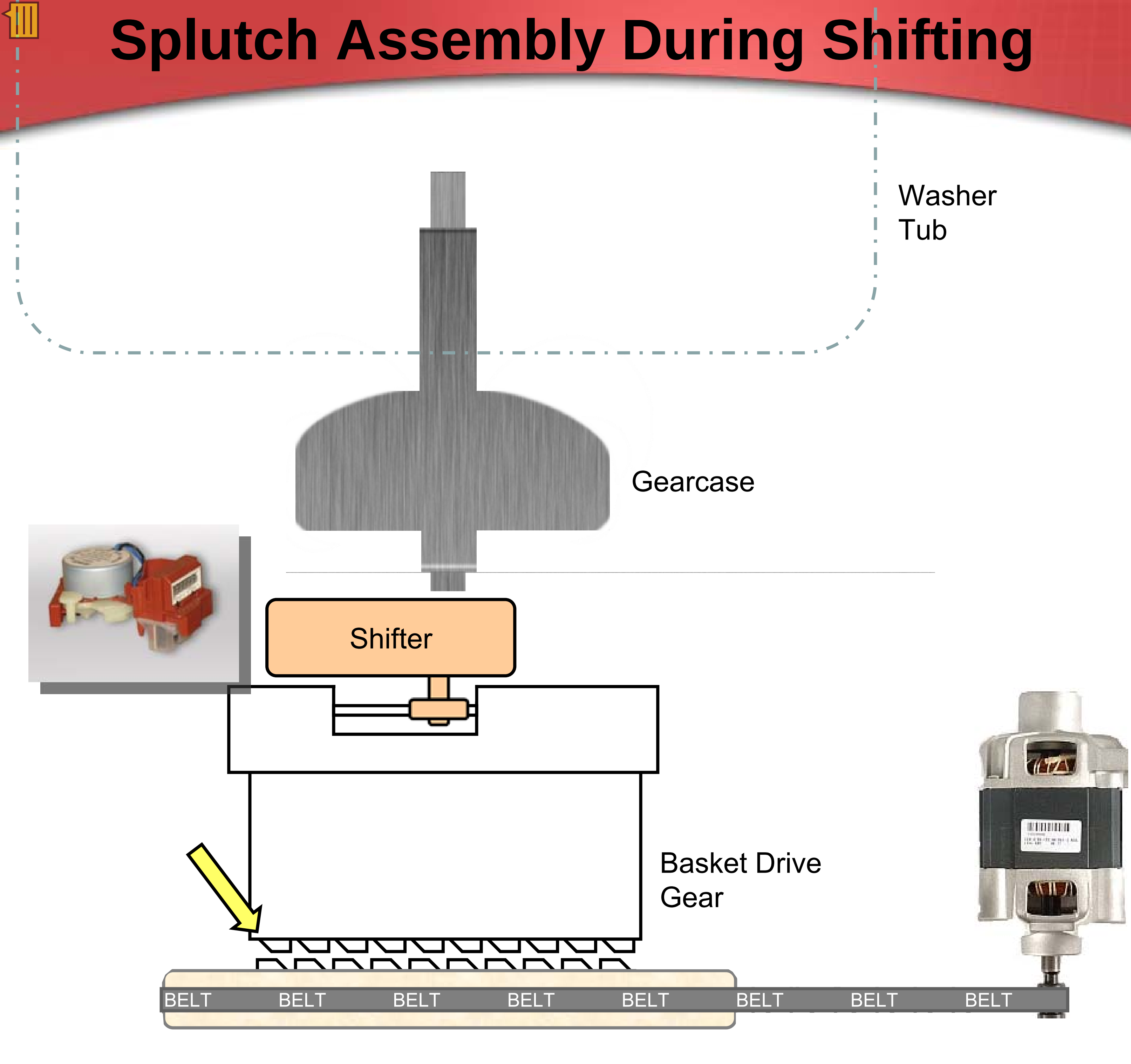


Pulley
Inner splines - connect to agitator shaft
Outer teeth - connect to Basket Drive Gear

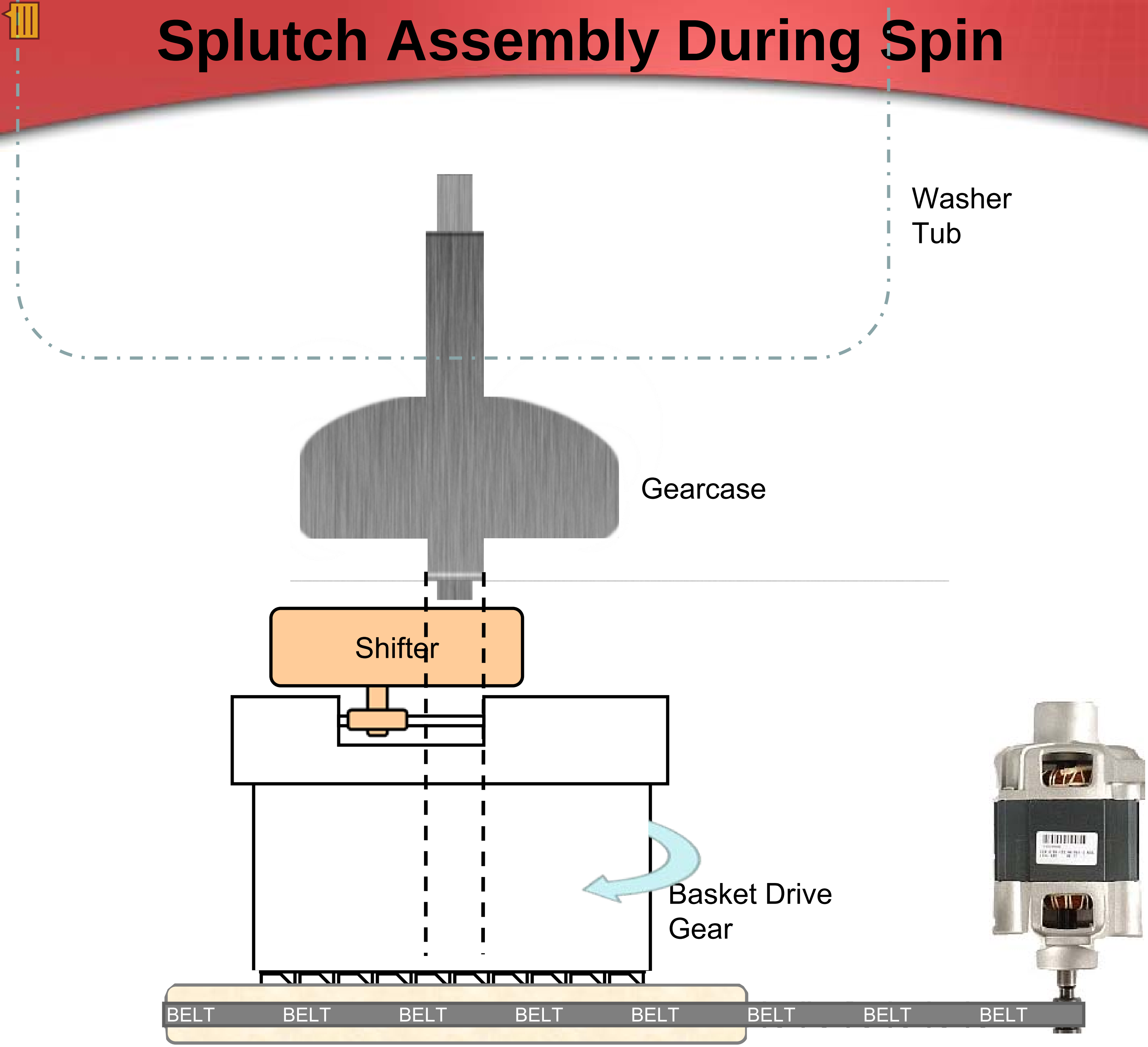
Splutch Assembly During Agitate

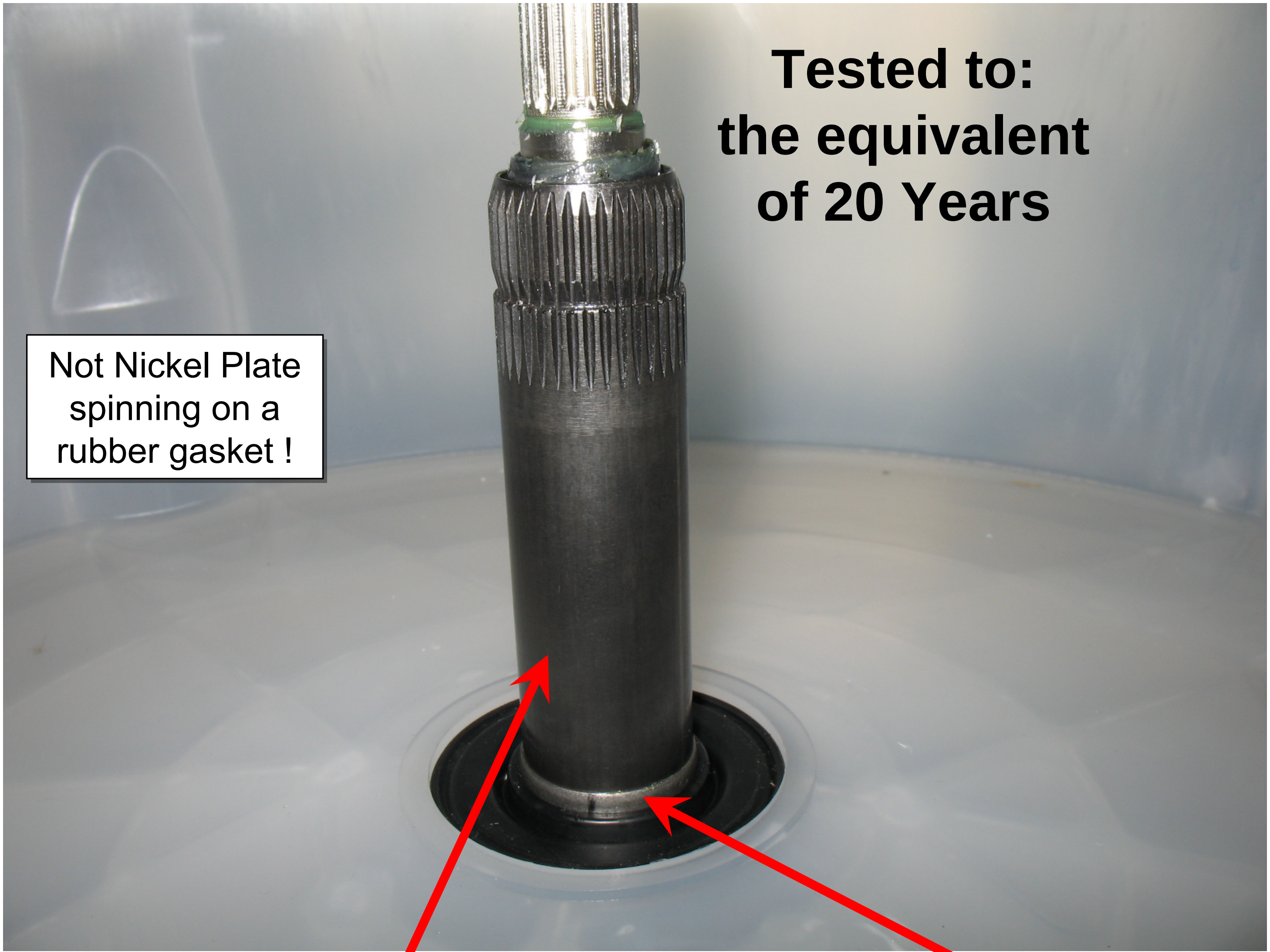


Splutch Assembly During Shifting



Splutch Assembly During Spin





Treated Shaft

Stainless Steel Wear Sleeve

Diagnostics

Customer Viewable Codes

- Long Fill (Wash LED on)
- Long Drain (Spin LED on)
- Lid Lock (Lid Lock LED flashing)

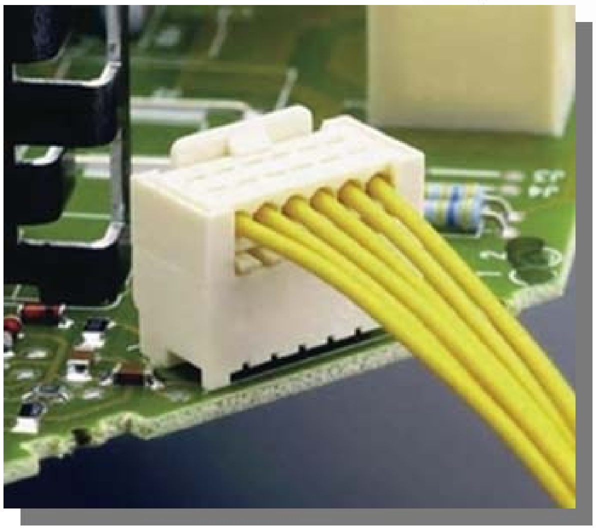


Diagnostic Guide

- Check Power Supply
- Check Water Supply
- 20,000 Ω - Meter
- Thin Diameter Probes
- Check Connections
  - Bent
  - Broken
  - Loose
  - Failed Terminals
  - Unseated Wires
  - Corrosion

Make your life easier…



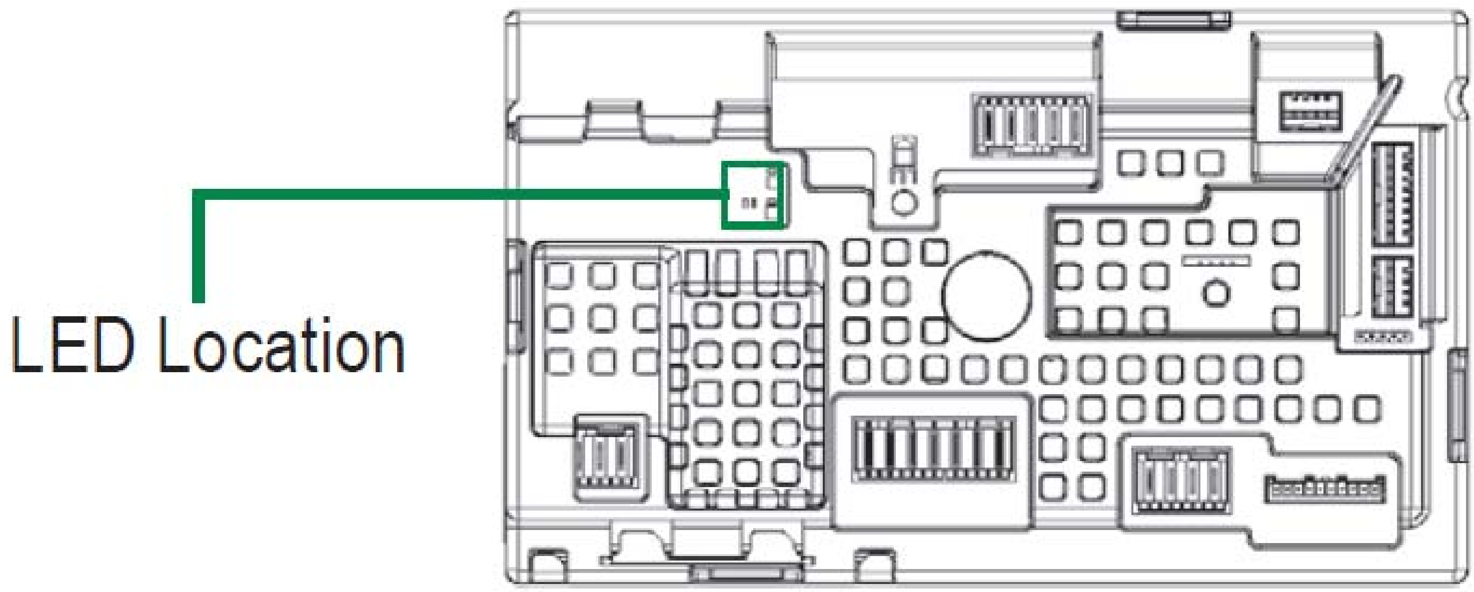


Thin Test Leads



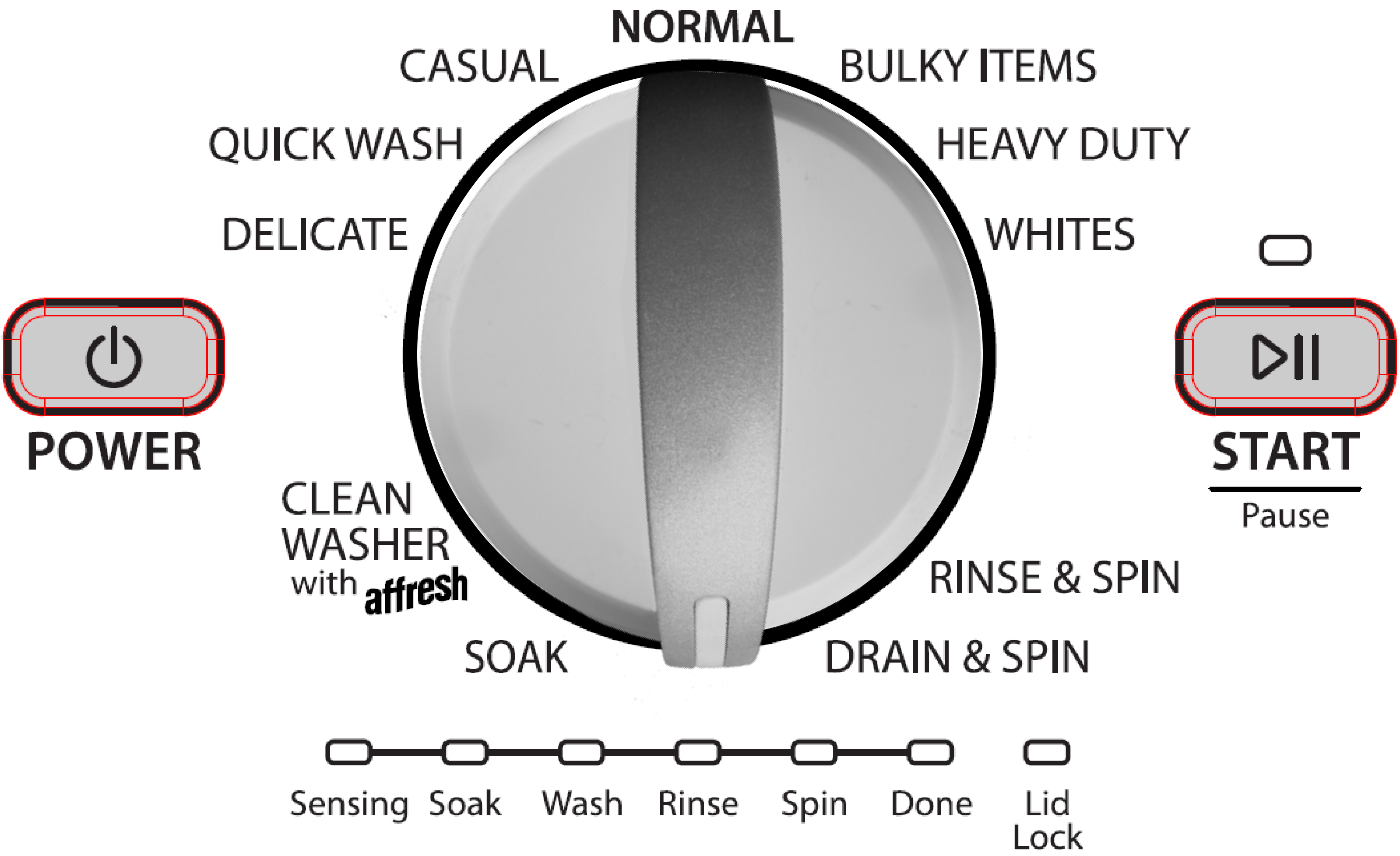
Diagnostic LED

- LED On = Control OK
- LED Off = Check power and main control



Activating Diagnostic Modes

Non Intuitive

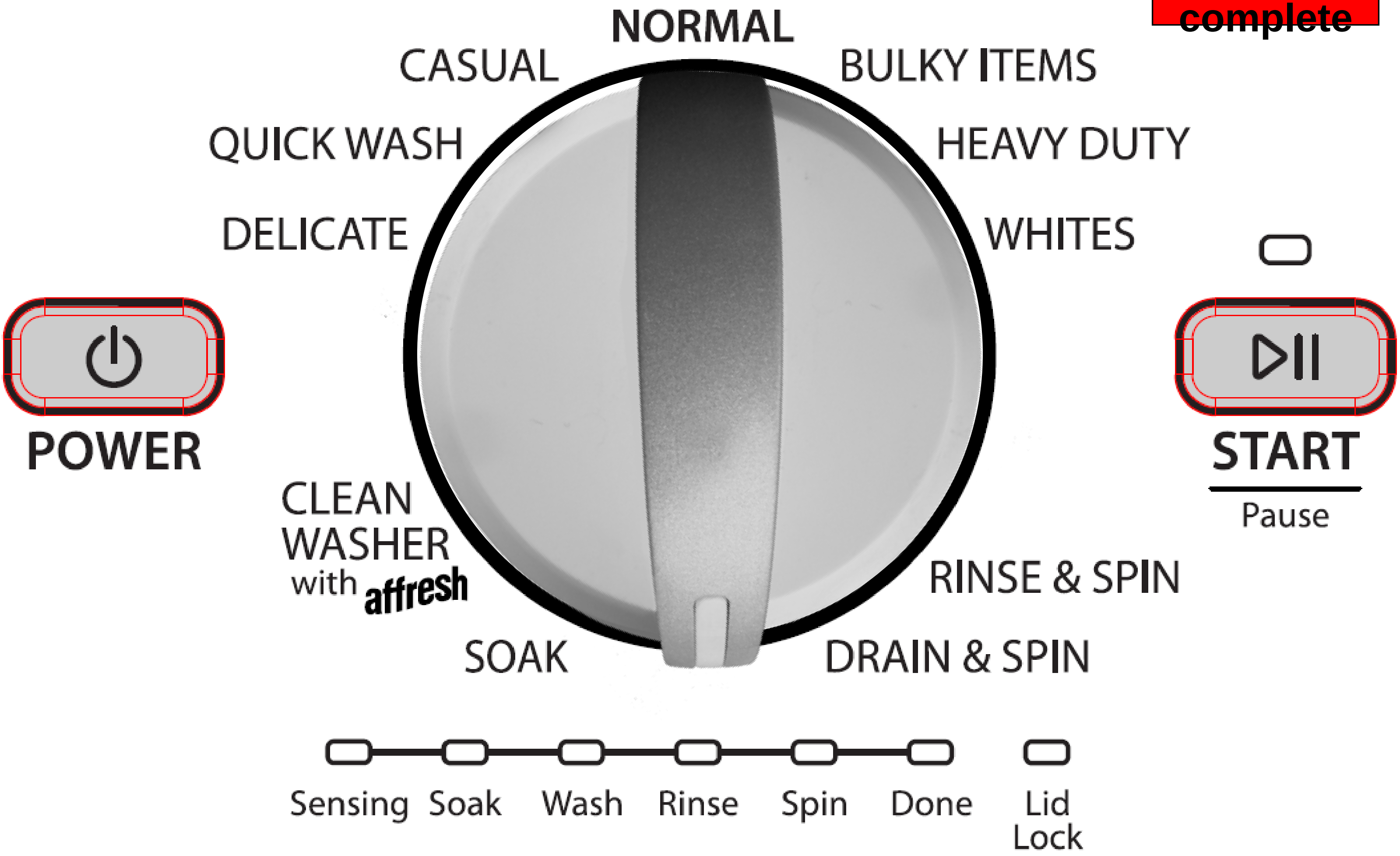


Activating Diagnostic Modes

The starting position of the knob is not important.

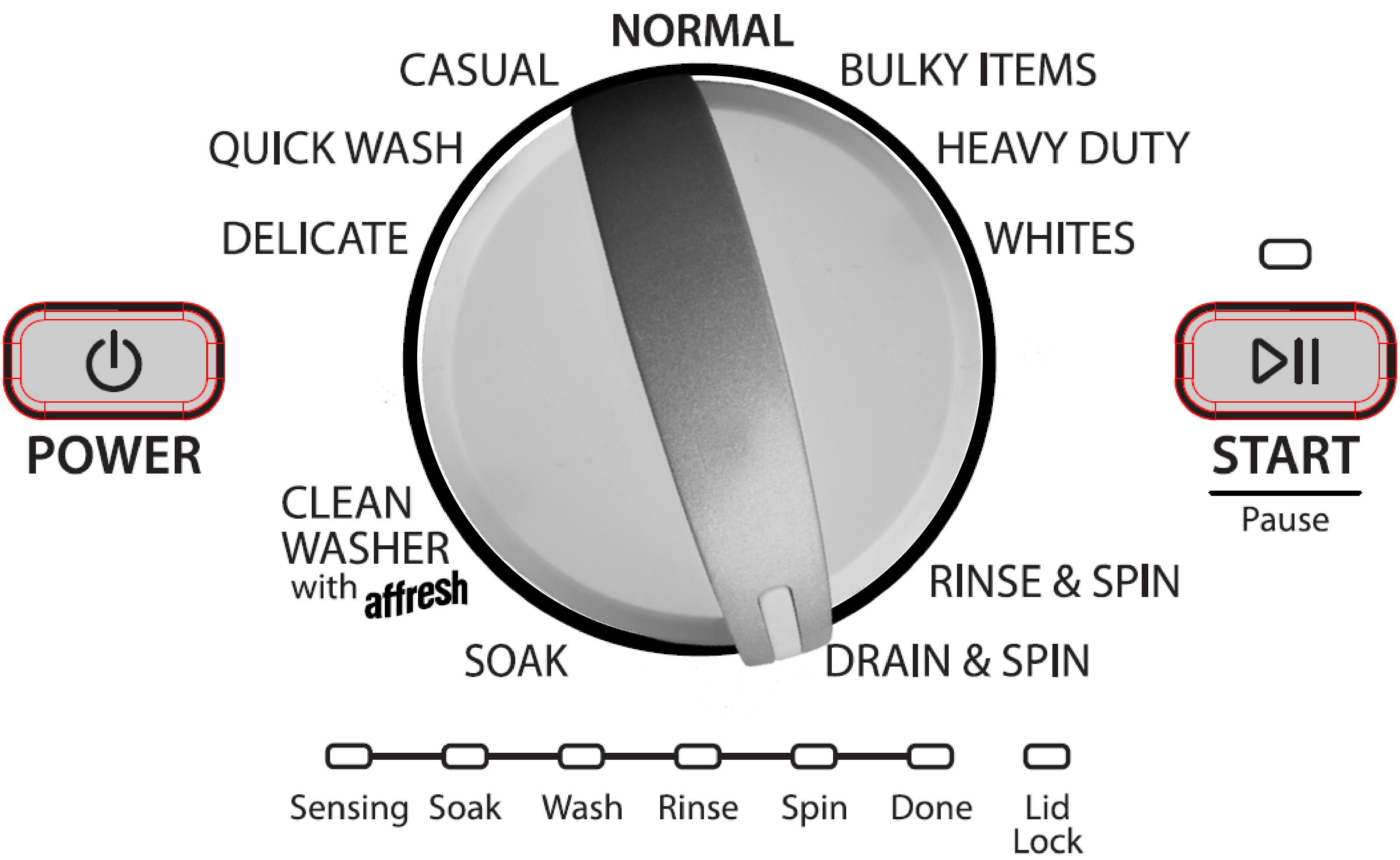
Rotate the cycle-selector knob counterclockwise to “clear”

8 SECONDS to complete



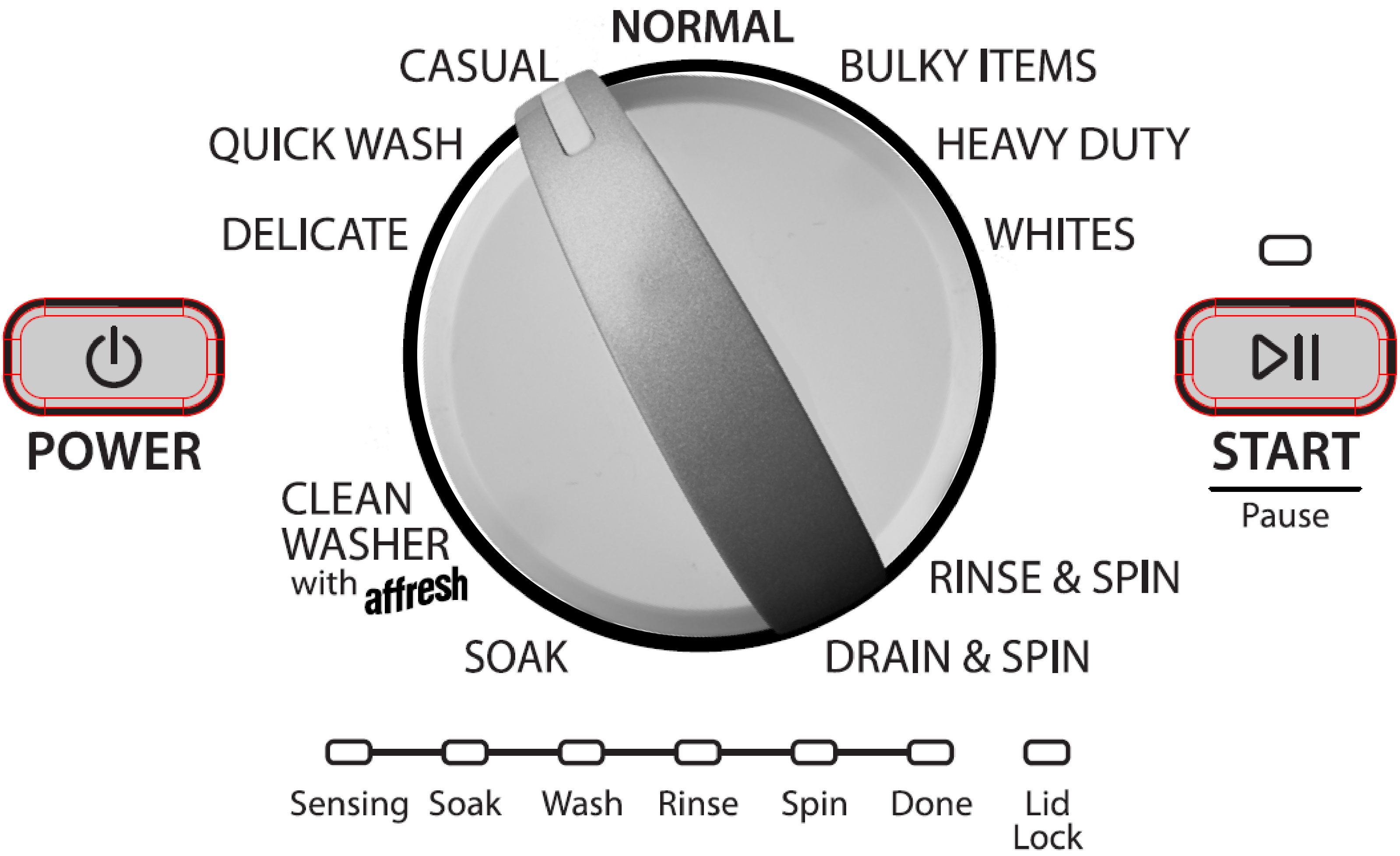
Activating Diagnostic Modes

CW	CW	CW	CCW	CW



Activating Diagnostic Modes

L to Clear	R	R	R	L	R



Successful Activation

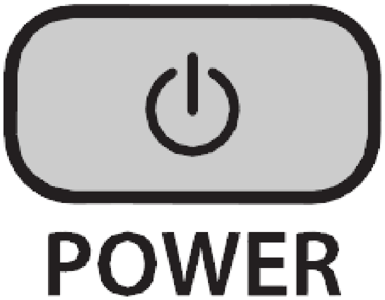


Unsuccessful Entry

- If the indicators came on:
  - You are in an operating mode
  - Retry the entry process
  - Rotating dial too fast or slow
- If the indicators did not come on:
  - Verify the power
  - Test the main control

Exiting Diagnostic Modes

- Press the POWER button at any time



Diagnostic Test Modes

The Start button flashes when the Power is turned on.

When the Cycle Selector Knob is set to NORMAL, each button will cycle through its own LED’s.

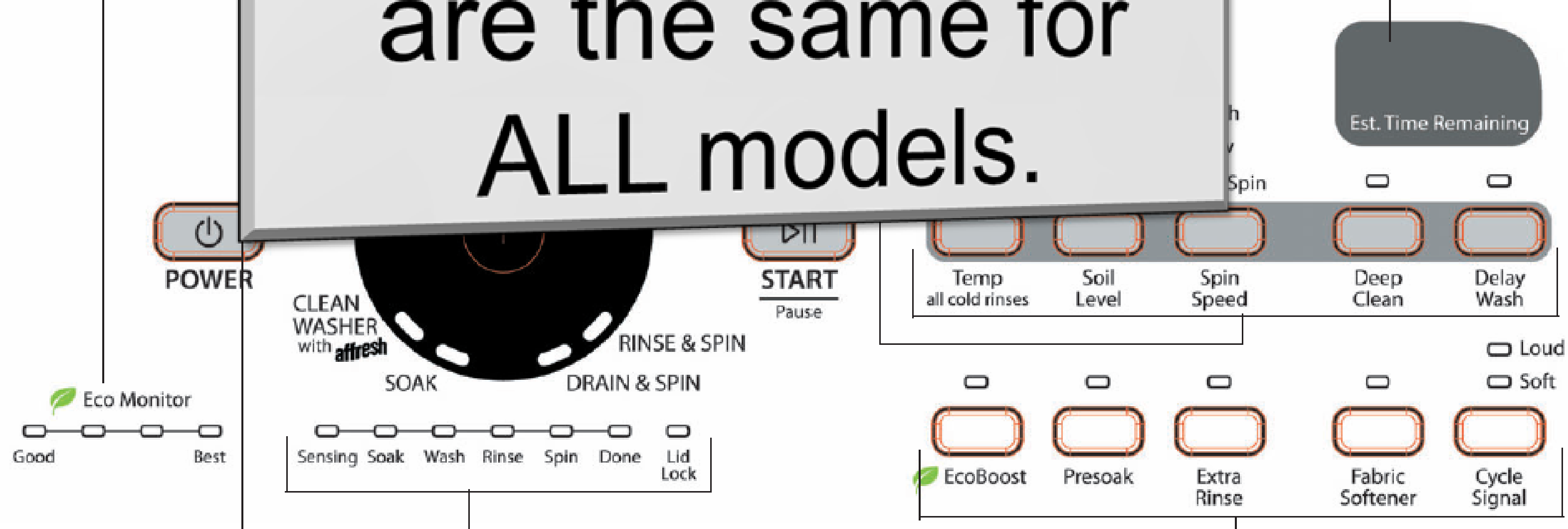
Rotating the Cycle Selector

Knob

Access and Codes are the same for ALL models.

If available, displays

ault and Error Codes



Power Button deactivates all test modes

The STATUS LED’s will flash on and off in ½ second intervals when accessing the Diagnostic Test Modes.

When the Cycle Selector Knob is set to NORMAL, each button will cycle through its own LED’s.

Diagnostic Test Modes

The Start button flashes when

When the Cycle Selector Knob is set

- Diagnostic Test Modes allow factory or service personnel to test and verify all inputs to the machine control electronics.
- Do a quick and overall checkup of the washer with these tests before going to specific tests.

When the Cycle Selector Knob is set to NORMAL, each button will cycle through its own LED's.

The STATUS LED's will flash on and off in ½ second intervals when accessing the Diagnostic Test Modes.

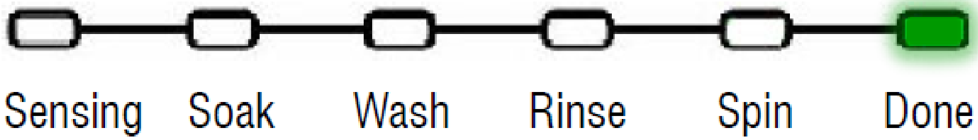
Once You Are In …

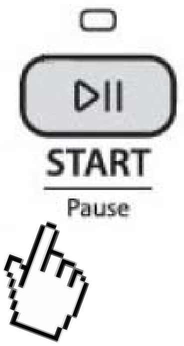
DIAGNOSTIC TEST MODES							
MODE	STATUS LEDs						DISPLAY
	SENSING	SOAK	WASH	RINSE	SPIN	DONE	
Fault Code Display Mode						On	01
Automatic Test Mode					On		02
Manual Test Mode					On	On	03
Calibration Mode				On			04
Sales Demo				On		On	05
UI Test Mode				On	On		06

Display Models Only

Fault Code Display

Turn the cycle-selector knob until:





or



Fault Code Display

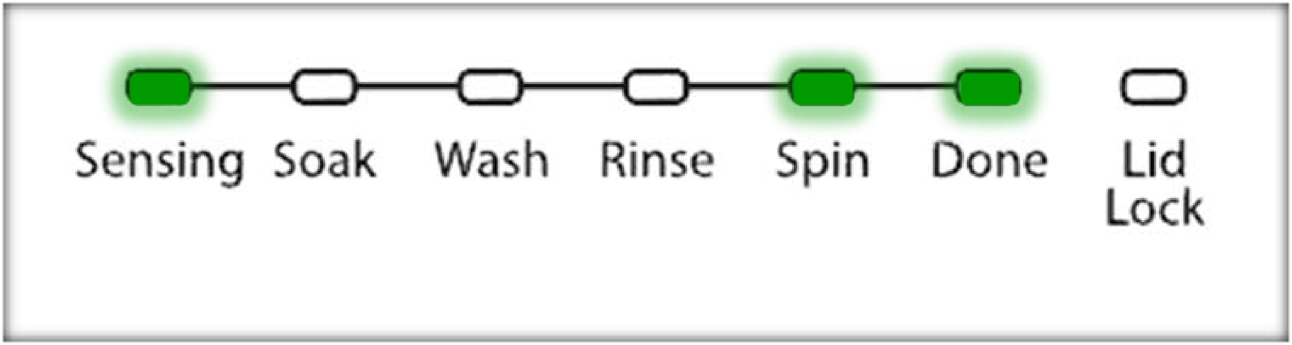
FAULT NUMBER							ERROR NUMBER						
Status LEDs						DISPLAY	Status LEDs						DISPLAY
SENSING*	SOAK	WASH	RINSE	SPIN	DONE		SENSING*	SOAK	WASH	RINSE	SPIN	DONE	
On				On	On	F3					On	On	E3

NOTE: *LED names will vary on selected models.*

Example

FAULT NUMBER							ERROR NUMBER						
Status LEDs							Status LEDs						
SENSING*	SOAK	WASH	RINSE	SPIN	DONE	DISPLAY	SENSING*	SOAK	WASH	RINSE	SPIN	DONE	DISPLAY
On				On	On	F3					On	On	E3

NOTE: *LED names will vary on selected models.*



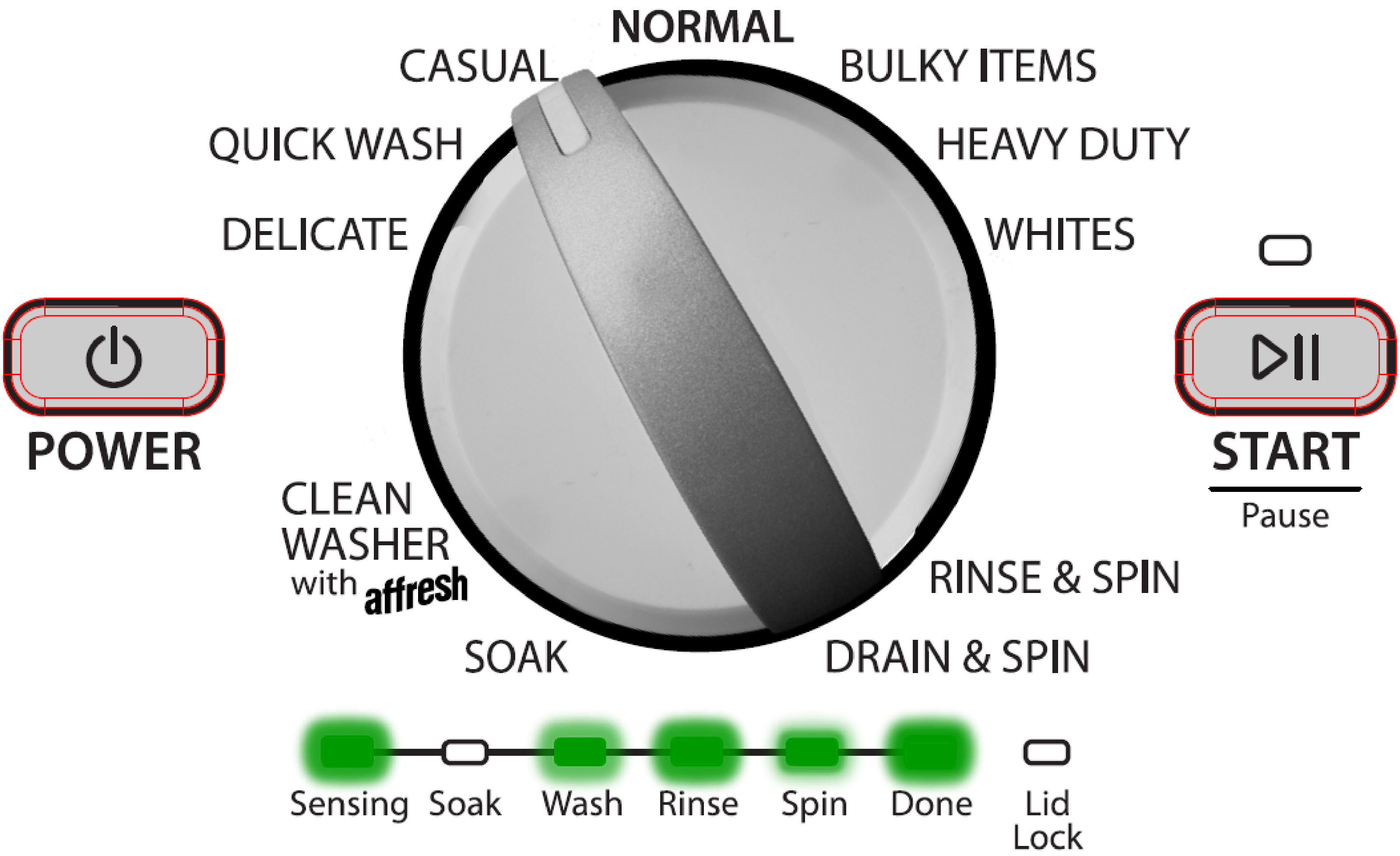


Fault Code Display

STUCK KEY	On			On		F2					On	E1
One or more keys on the User Interface were actuated for 15 consecutive seconds. • Fault occurs during Diagnostic Test Mode if a stuck key is detected. • See TEST #4: Consoles and Indicators, page 16.												
MISMATCH OF MAIN CONTROL & UI	On			On		F2				On	On	E3
The User Interface identification does not match the expected value in the Main Control Board • Fault occurs during Diagnostic Test Mode if a mismatch of main control and UI is identified. • See TEST #4: Consoles and Indicators, page 16.												
PRESSURE SENSOR FAULT	On			On	On	F3				On		E2
Fault is displayed when the Main Control detects an out of range pressure signal. • Check pressure hose connection from tub to main control. Is hose pinched, kinked, plugged or leaking air? • See TEST #6: Water Level, page 17.												
INLET WATER TEMPERATURE FAULT	On			On	On	F3				On	On	E3
Fault is displayed when the Inlet Thermistor is detected to be open or shorted. • See TEST #5: Temperature Thermistor, page 16.												
LID SWITCH FAULT	On		On		On	F5					On	E1
Lid Switch has not been detected after multiple wash cycles. Fault is displayed when one the following conditions occur:												

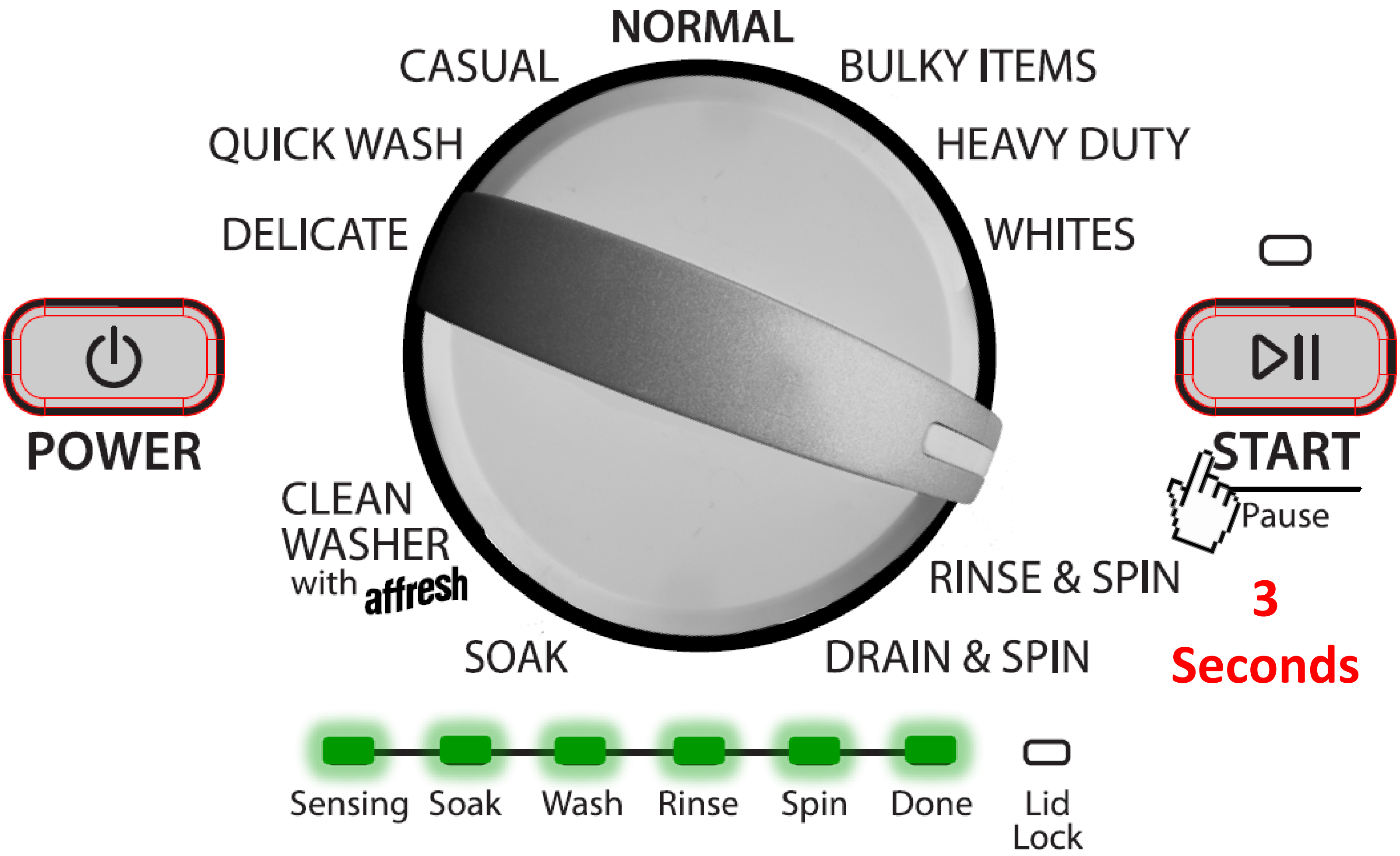
Fault Code Display (practice)

To view last 4 fault codes:
CCW = recent to oldest



Clearing Stored Fault Codes

NOTE: A fault/error code will be removed from memory if it does not reoccur after 10 consecutive wash cycles.



DIAGNOSTIC TEST MODES							
MODE	STATUS LEDs						DISPLAY
	SENSING	SOAK	WASH	RINSE	SPIN	DONE	
Fault Code Display Mode						On	01
Automatic Test Mode					On		02
Manual Test Mode					On	On	03
Calibration Mode				On			04
Sales Demo				On		On	05
UI Test Mode				On	On		06

Display Models Only

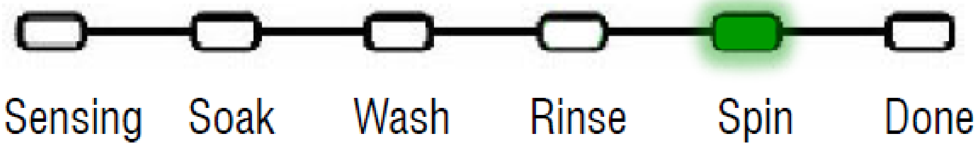
Automatic Test

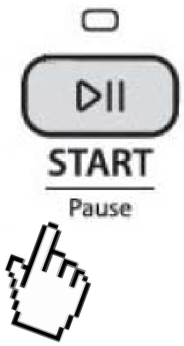
- Best done at the end of service to make sure that everything is plugged back in and to verify proper operation.

NOTE: Lid must be closed with lid lock enabled to perform test.
(Lift the top)

Automatic Test

Turn the cycle-selector knob until:





Manual Advancing

or

NOTE: Lid must be closed with lid lock enabled to perform test.



AUTOMATIC TEST MODE

See page 5 to access Automatic Test Mode

Press the **START** button to begin the Automatic Test. ***NOTE:*** *Lid must be closed with lid lock enabled to perform Automatic Test.*

FUNCTION	STATUS LEDs							DISPLAY	Est. TIME
Recommended Procedure	SENSING	SOAK	WASH	RINSE	SPIN	DONE	LID LOCK	If Available	In Seconds
LID WILL LOCK						On	On	01	~2
Motor must be at "0" RPM. If lid does not lock, go to Manual Test: Lid Lock, page 9.									
COLD VALVE WILL ACTUATE					On		On	02	~2
If no water, or temperature is wrong, go to Manual Test: Cold Valve, page 9.									
HOT VALVE WILL ACTUATE					On	On	On	03	~5
If no water, or temperature is wrong, go to Manual Test: Hot Valve, page 9.									
RESERVED FOR FUTURE DEVELOPMENT				On			On	04	~5
Unit will pause for 5 seconds.									
RESERVED FOR FUTURE DEVELOPMENT				On		On	On	05	~5
Unit will pause for 5 seconds.									
FABRIC SOFTENER DISPENSER & COLD VALVE WILL ACTUATE				On	On		On	06	~5
If no water in fabric softener dispenser, go to Manual Test: Fabric Softener Dispenser, page 9.									
HOT & COLD VALVE WILL ACTUATE				On	On	On	On	07	~45
Hot & cold water valves will actuate for the specified time period.									
SHIFTER MOVES TO AGITATION POSITION			On				On	08	~15
If motor fails to agitate, go to Manual Test: Gentle and/or Heavy Agitation, page 9.									
MOTOR AGITATES			On			On	On	09	~10
If motor fails to agitate, go to Manual Test: Gentle and/or Heavy Agitation, page 9.									
DRAIN PUMP WILL ACTUATE			On		On		On	10	~30
If water is not draining, go to Manual Test:: Drain, page 9.									
SHIFTER MOVES TO SPIN POSITION			On		On	On	On	11	~15
If basket is not turning, go to Manual Test: Low and/or High Spin, page 9.									
MOTOR SPINS			On	On			On	12	~10
If basket is not turning, go to Manual Test: Low and/or High Spin, page 9.									
LID REMAINS LOCKED UNTIL UNIT SENSES A STOPPED BASKET			On	On		On	On	13	~35
Basket must stop spinning (0 RPM) before test continues to next phase. Time for basket to stop spinning may vary from 30 seconds up to 2-minutes.									
LID WILL UNLOCK AND CYCLE COMPLETES			On	On	On			14	~2
If lid does not unlock, go to Manual Test: Lid Lock, page 9. If no end-of-cycle tone, make sure Cycle Signal is turned-on.								Estimated Time	~3 min.

FOR SERVICE TECHNICIAN ONLY

AUTOMATIC TEST MODE

See page 5 to access Automatic Test Mode

Press the **START** button to begin the Automatic Test. ***NOTE:*** *Lid must be closed with lid lock enabled to perform Automatic Test.*

FUNCTION	STATUS LEDs							DISPLAY	Est. TIME
Recommended Procedure	SENSING	SOAK	WASH	RINSE	SPIN	DONE	LID LOCK	If Available	In Seconds
LID WILL LOCK						On	On	01	~2
Motor must be at "0" RPM. If lid does not lock, go to Manual Test: Lid Lock, page 9.									
COLD VALVE WILL ACTUATE					On		On	02	~2
If no water, or temperature is wrong, go to Manual Test: Cold Valve, page 9.									
HOT VALVE WILL ACTUATE					On	On	On	03	~5
If no water, or temperature is wrong, go to Manual Test: Hot Valve, page 9.									
RESERVED FOR FUTURE DEVELOPMENT				On			On	04	~5
Unit will pause for 5 seconds.									
RESERVED FOR FUTURE DEVELOPMENT				On		On	On	05	~5
Unit will pause for 5 seconds.									
FABRIC SOFTENER DISPENSER & COLD VALVE WILL ACTUATE				On	On		On	06	~5
If no water in fabric softener dispenser, go to Manual Test: Fabric Softener Dispenser, page 9.									
HOT & COLD VALVE WILL ACTUATE				On	On	On	On	07	~45
Hot & cold water valves will actuate for the specified time period.									
SHIFTER MOVES TO AGITATION POSITION			On				On	08	~15
If motor fails to agitate, go to Manual Test: Gentle and/or Heavy Agitation, page 9.									
MOTOR AGITATES			On			On	On	09	~10
If motor fails to agitate, go to Manual Test: Gentle and/or Heavy Agitation, page 9.									
DRAIN PUMP WILL ACTUATE			On		On		On	10	~30
If water is not draining, go to Manual Test:: Drain, page 9.									
SHIFTER MOVES TO SPIN POSITION			On		On	On	On	11	~15
If basket is not turning, go to Manual Test: Low and/or High Spin, page 9.									
MOTOR SPINS			On	On			On	12	~10
If basket is not turning, go to Manual Test: Low and/or High Spin, page 9.									
LID REMAINS LOCKED UNTIL UNIT SENSES A STOPPED BASKET			On	On		On	On	13	~35
Basket must stop spinning (0 RPM) before test continues to next phase. Time for basket to stop spinning may vary from 30 seconds up to 2-minutes.									
LID WILL UNLOCK [illegible]			On	On	On			14	~2
If lid does not unlock, go to Manual Test: Lid Lock, page 9. If no end-of-cycle tone, make sure Cycle Signal is turned-on.								Estimated Time	~3 min.

FOR SERVICE TECHNICIAN ONLY

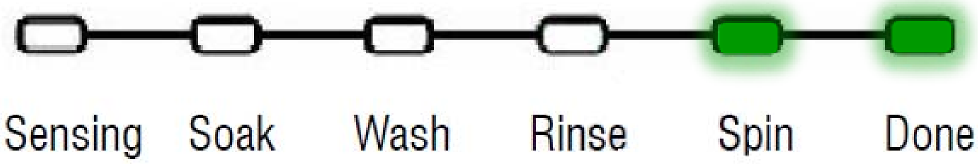


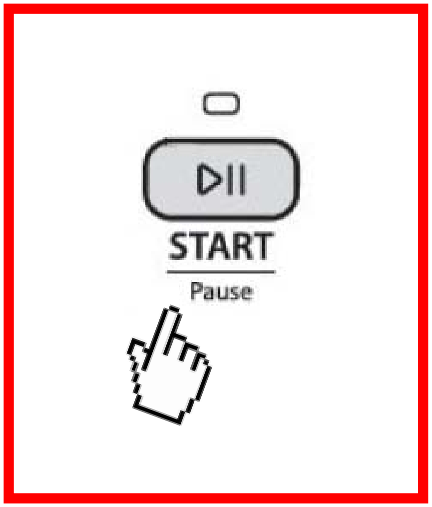
DIAGNOSTIC TEST MODES							
MODE	STATUS LEDs						DISPLAY
	SENSING	SOAK	WASH	RINSE	SPIN	DONE	
Fault Code Display Mode						On	01
Automatic Test Mode					On		02
Manual Test Mode					On	On	03
Calibration Mode				On			04
Sales Demo				On		On	05
UI Test Mode				On	On		06

Display Models Only

Manual Test

Turn the cycle-selector knob until:





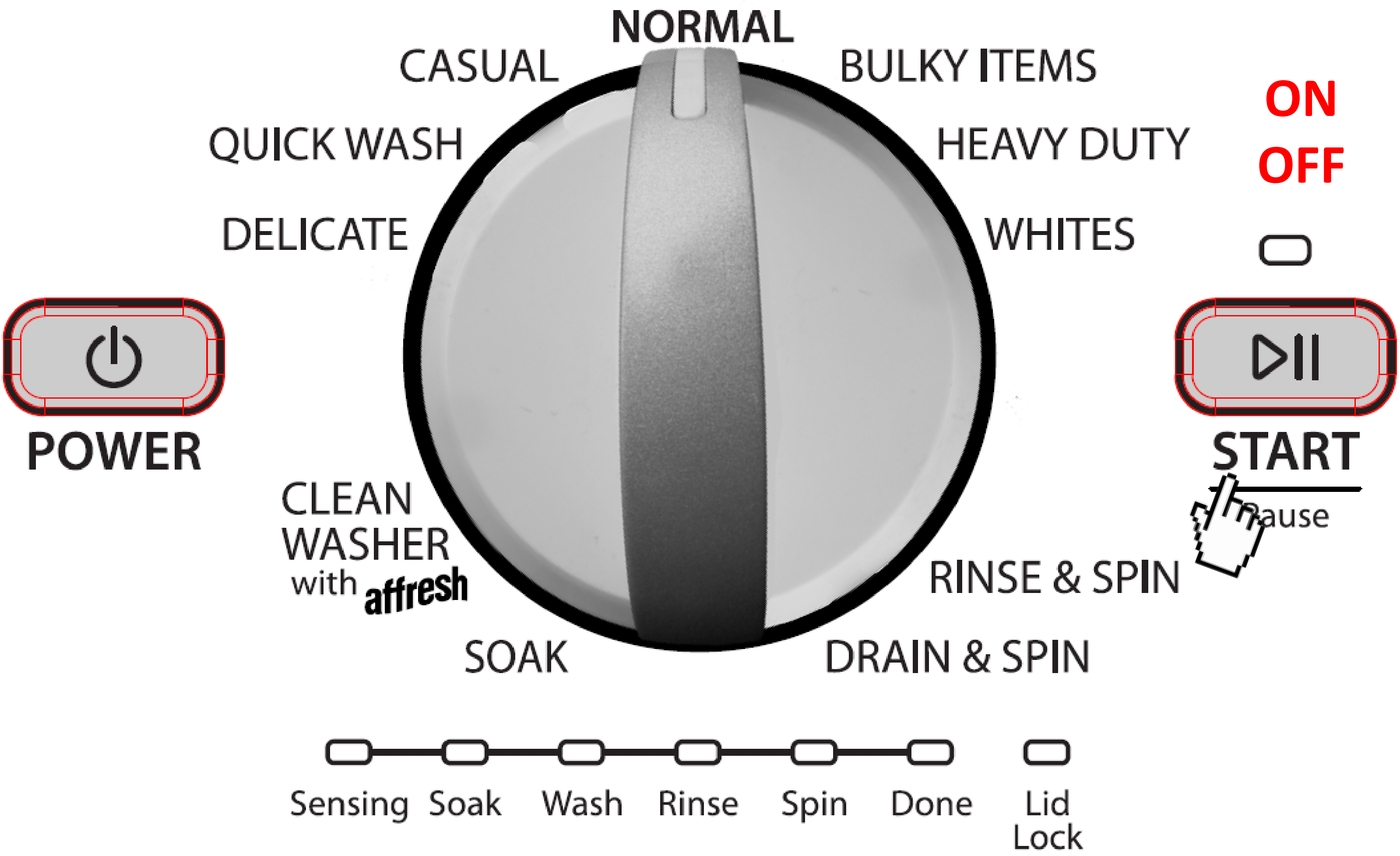
or

NOTE: Lid must be closed with lid lock enabled to perform some tests.



Manual Test

NOTE: Multiple outputs may be activated simultaneously.
NOTE: Outputs left on, will time-out after 5-minutes.



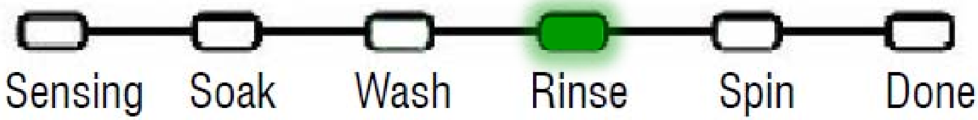
OUTPUT	STATUS LEDs							DISPLAY
Output Details ***NOTE:*** *Outputs will time-out after 5-minutes.*	SENSIN	SOAK	WASH	RINSE	SPIN	DONE	LOCKED	If Available
LID LOCK							On	00
Lock and unlock the lid. Will only lock when lid is closed. Will only unlock when basket RPM is 0. If lid is not closed, unit will beep and LED's will flash. • If lid does not lock or unlock, go to TEST #8: Lid Lock, page 18.								
COLD VALVE						On		01
Turns ON and turns OFF cold water valve. • If valve does not turn on, go to TEST #2: Valves, page 13.								
HOT VALVE					On			02
Turns ON and turns OFF hot water valve. • If valve does not turn on, go to TEST #2: Valves, page 13.								
RESERVED FOR FUTURE DEVELOPMENT					On	On		03
If selected, unit will beep and LED's will flash.								
RESERVED FOR FUTURE DEVELOPMENT				On				04
If selected, unit will beep and LED's will flash.								
FABRIC SOFTENER DISPENSER				On		On		05
Turns ON and turns OFF the fabric softener valve. (May not be available on all models or brands.) • If valve does not turn on, go to TEST #2: Valves, page 13.								
OXI DISPENSER				On	On			06
Turns ON and turns OFF the Oxi dispenser valve. (May not be available on all models or brands.) • If valve does not turn on, go to TEST #2: Valves, page 13.								
DRAIN				On	On	On		07
Turns ON and turns OFF the drain pump. • If pumps does not turn on, go to TEST #7: Drain Pump, page 17.								
RESERVED FOR FUTURE DEVELOPMENT			On					08
If selected, unit will beep and LED's will flash.								
LOW SPIN			On			On	On	09
Toggles between idle motor and spinning to 500 RPM. **IMPORTANT:** To activate Low Spin, RPM must read "0" and lid must be closed with lid lock enabled. If lid is not closed, unit will beep and LED's will flash. • If motor does not spin, go to TEST #3, pages 13 & 14. **IMPORTANT: Water in tub must be drained before**								
HIGH SPIN			On		On		On	10
Toggles between idle motor and maximum RPM. **IMPORTANT:** To activate High Spin, RPM must read "0" and lid must be closed with lid lock enabled. If lid is not closed, unit will beep and LED's will flash. • If motor does not spin, go to TEST #3, pages 13 & 14. **IMPORTANT: Water in tub must be drained before**								
GENTLE AGITATION			On		On	On		11
Toggles between idle motor and agitation of 400ms ON and 400ms OFF clockwise, then counterclockwise. **IMPORTANT:** To activate Gentle Agitation, RPM must read "0" and lid must be closed with lid lock enabled. If lid is not closed, unit will beep and LED's will flash. **NOTE:** Allow up to 15 seconds for shifter to reposition. • If motor does not agitate, go to TEST #3: Drive System (Shifter & Motor), pages 13 & 14.								
HEAVY AGITATION			On	On				12
Toggles between idle motor and agitation of 700ms ON and 500ms OFF clockwise, then counterclockwise. **IMPORTANT:** To activate Heavy Agitation, RPM must read "0" and lid must be closed with lid lock enabled. If lid is not closed, unit will beep and LED's will flash. **NOTE:** Allow up to 15 seconds for shifter to reposition. • If motor does not agitate, go to TEST #3: Drive System (Shifter & Motor), pages 13 & 14.								

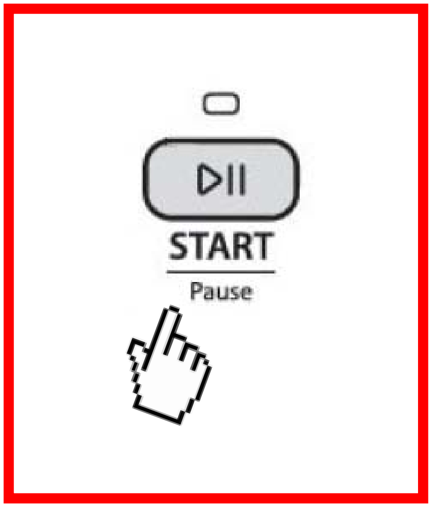
DIAGNOSTIC TEST MODES							
MODE	STATUS LEDs						DISPLAY
	SENSING	SOAK	WASH	RINSE	SPIN	DONE	
Fault Code Display Mode						On	01
Automatic Test Mode					On		02
Manual Test Mode					On	On	03
Calibration Mode				On			04
Sales Demo				On		On	05
UI Test Mode				On	On		06

Display Models Only

Calibration

Turn the cycle-selector knob until:





or

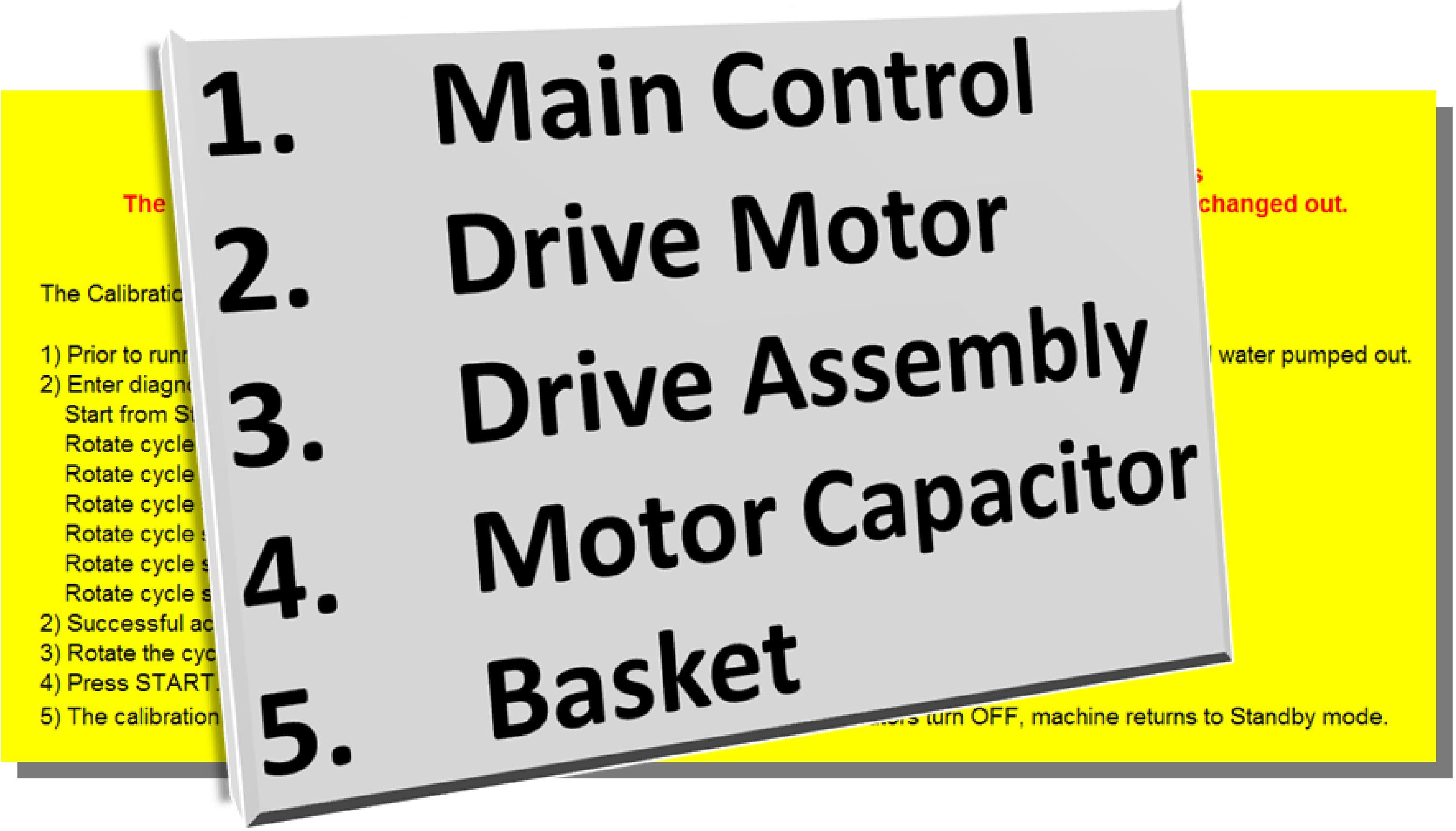


Calibration

Failure to perform Calibration will result in poor wash performance.

- Lid must be down to perform test.
- Basket must be empty of water & clothes.
- 2-3 minute cycle. Complete when door unlocks and machine enters standby mode.
- Do **NOT** interrupt calibration, disturb machine, remove power, or press POWER button; otherwise, calibration must be repeated.

Calibrate When?



DIAGNOSTIC TEST MODES

MODE	STATUS LEDs						DISPLAY
	SENSING	SOAK	WASH	RINSE	SPIN	DONE	
Fault Code Display Mode						On	01
Automatic Test Mode					On		02
Manual Test Mode					On	On	03
Calibration Mode				On			04
Sales Demo				On		On	05
UI Test Mode				On	On		06

Display Models Only

Sales Demo

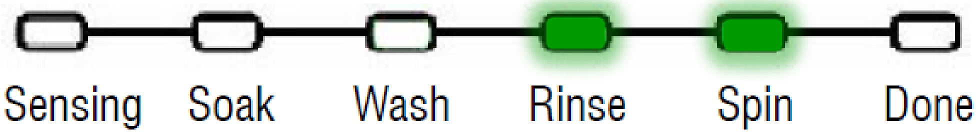
SALES DEMO: (For retail outlet use only.)
To enter push POWER
To exit, unplug the unit.

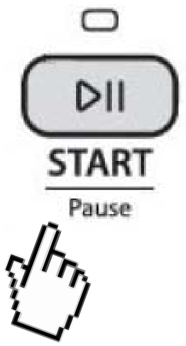
DIAGNOSTIC TEST MODES							
MODE	STATUS LEDs						DISPLAY
	SENSING	SOAK	WASH	RINSE	SPIN	DONE	
Fault Code Display Mode						On	01
Automatic Test Mode					On		02
Manual Test Mode					On	On	03
Calibration Mode				On			04
Sales Demo				On		On	05
UI Test Mode				On	On		06

Display Models Only

UI Test

Turn the cycle-selector knob until:





or

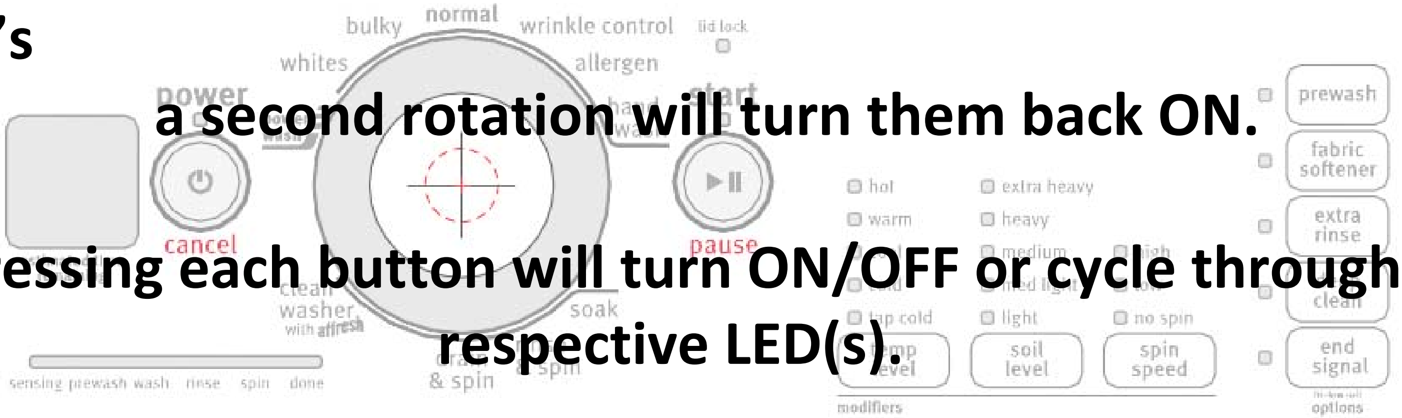


UI Test

- Entering UI test mode, all LED’s will be ON.

- Rotating cycle-selector knob 360° turns OFF the cycle LED’s

  a second rotation will turn them back ON.



- Pressing each button will turn ON/OFF or cycle through its respective LED(s).

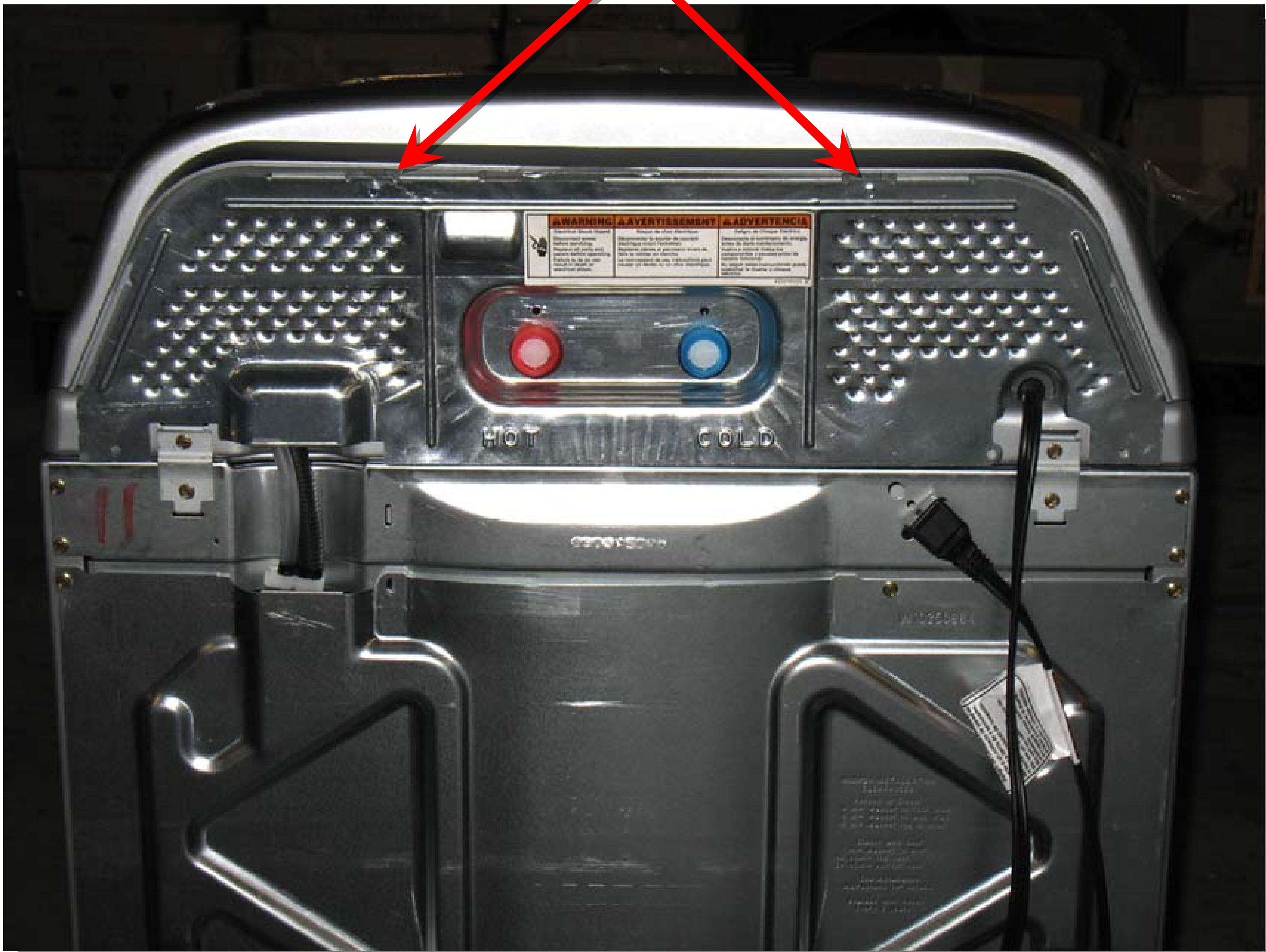
- Pressing the POWER key will deactivate the UI test mode.

Servicing the VMW



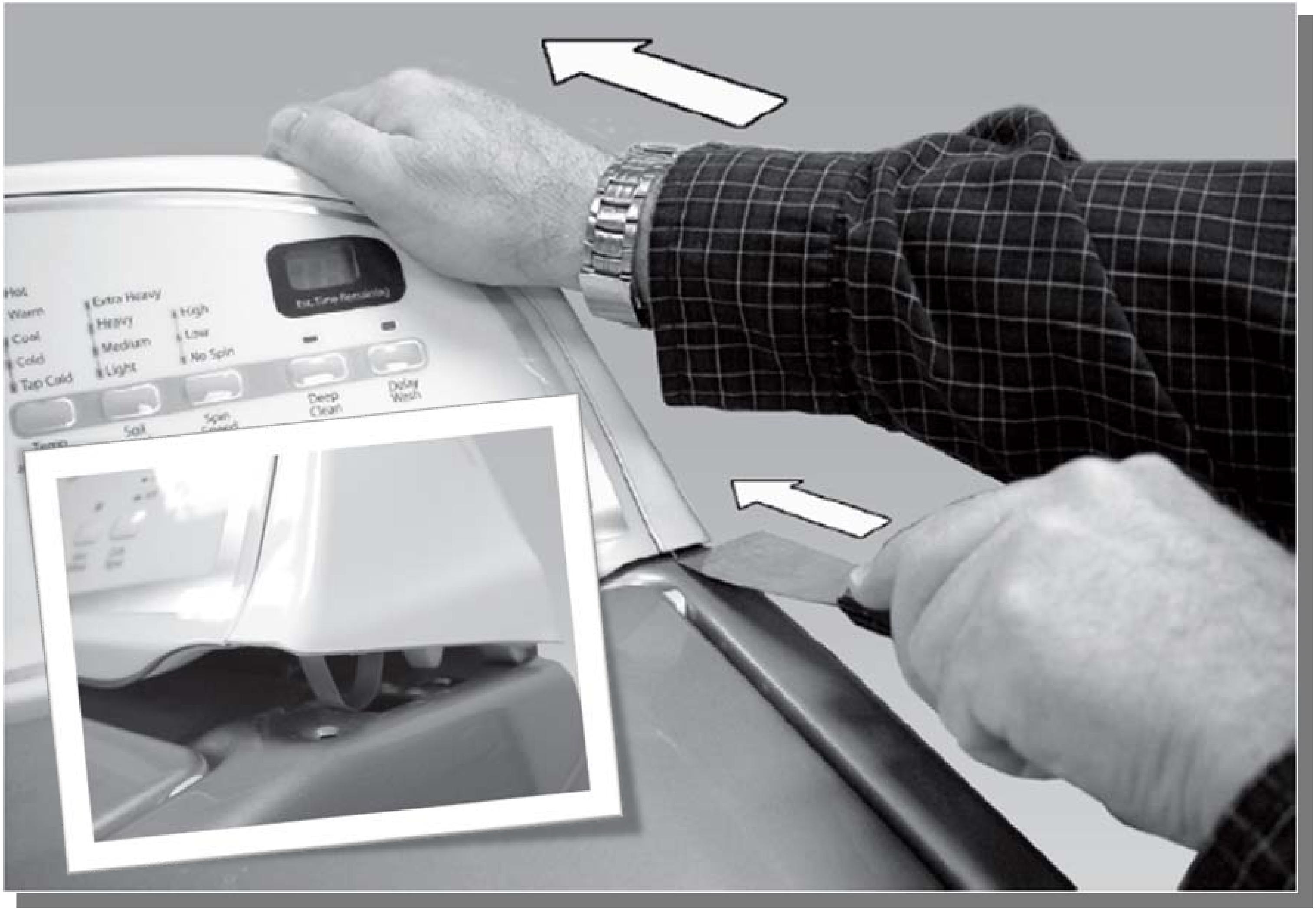
Removing Control Panel

1st Remove two Screws

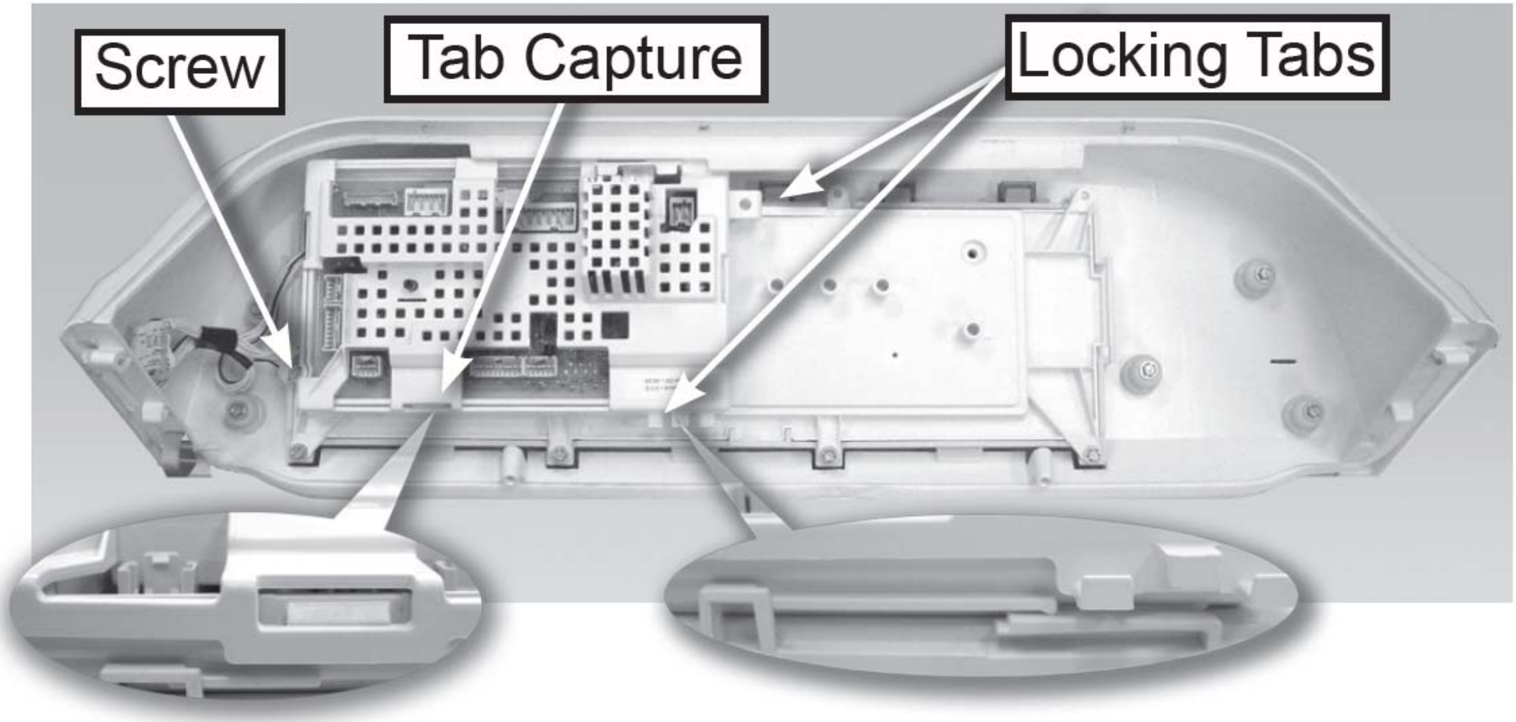


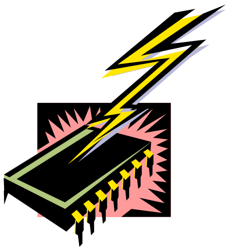
Removing Control Panel

Make sure to push back



Replacing The UI



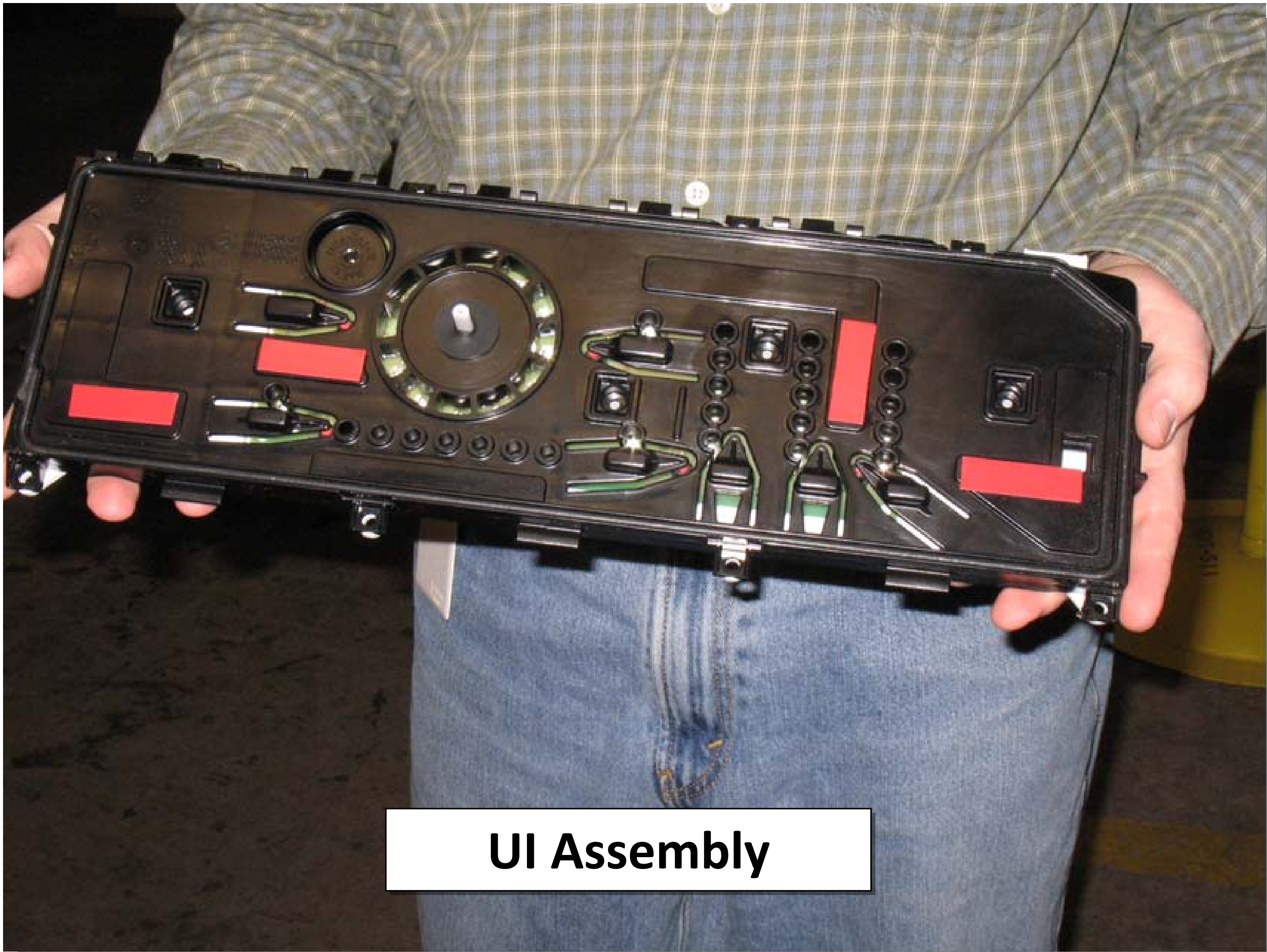




Replacing The UI



Replacing The UI



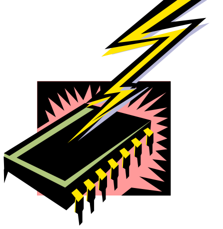
UI Assembly

Replacing The UI



Replacing The UI





Removing the Top

1. Top hinge screws
2. Harness cover
3. Pull forward
4. Lift
5. Push back
6. Swing up

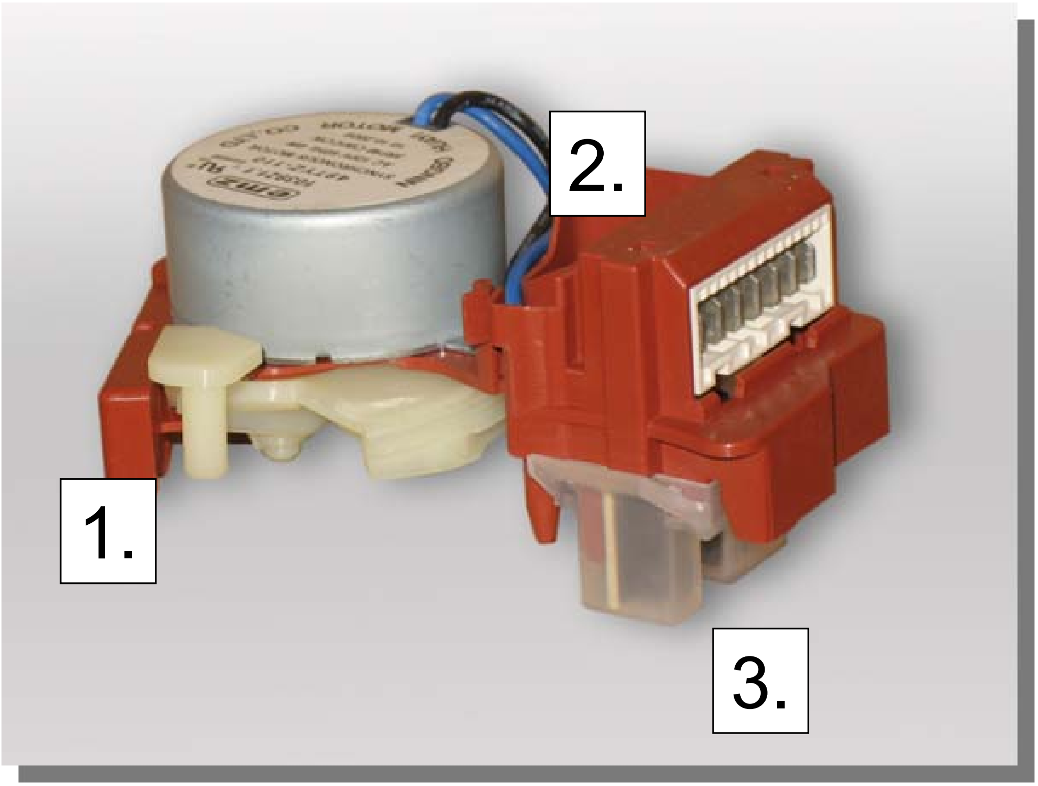




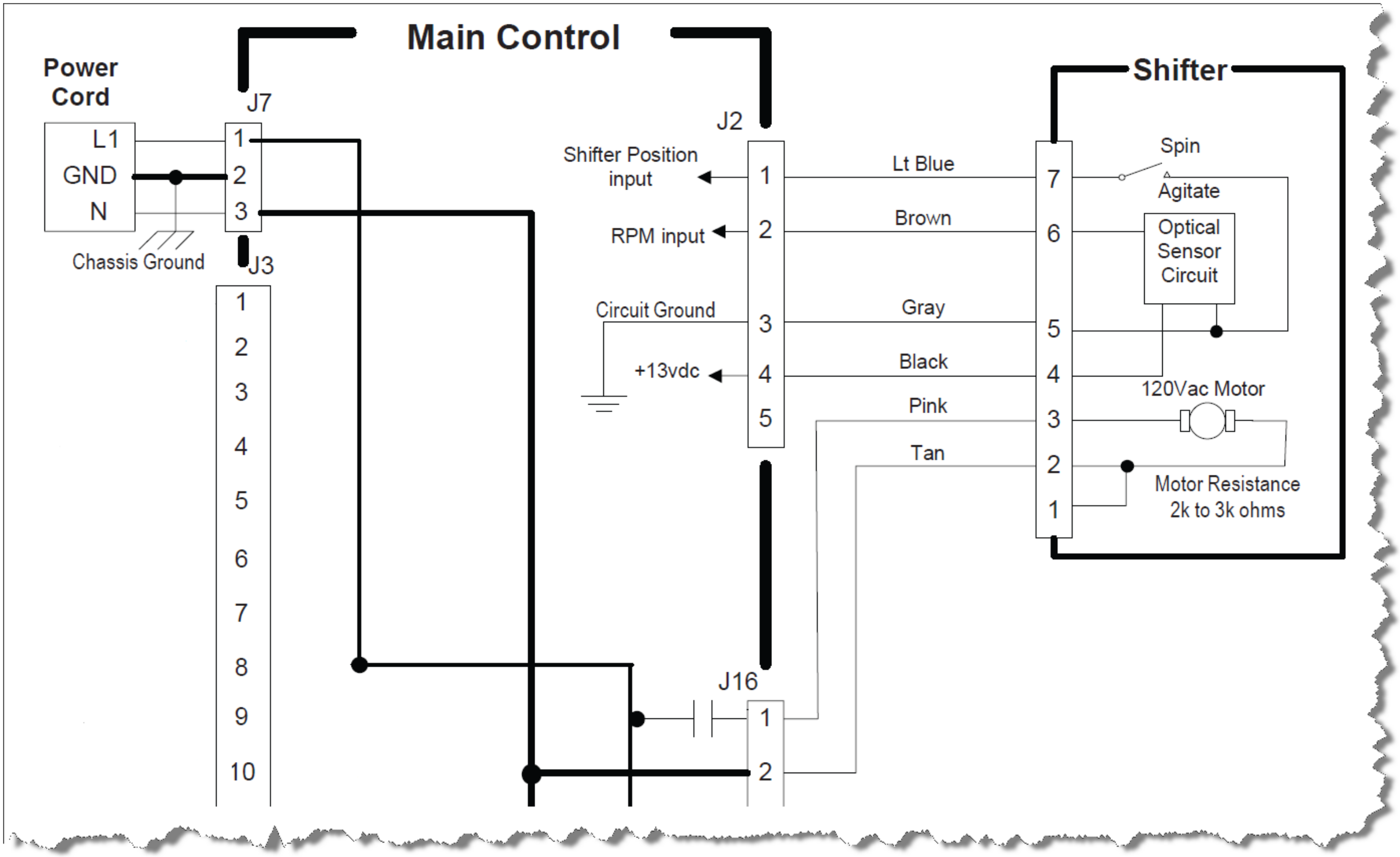


Note: Secure the lid whenever lifting the top.

How to Check the Shifter



How to Check the Shifter



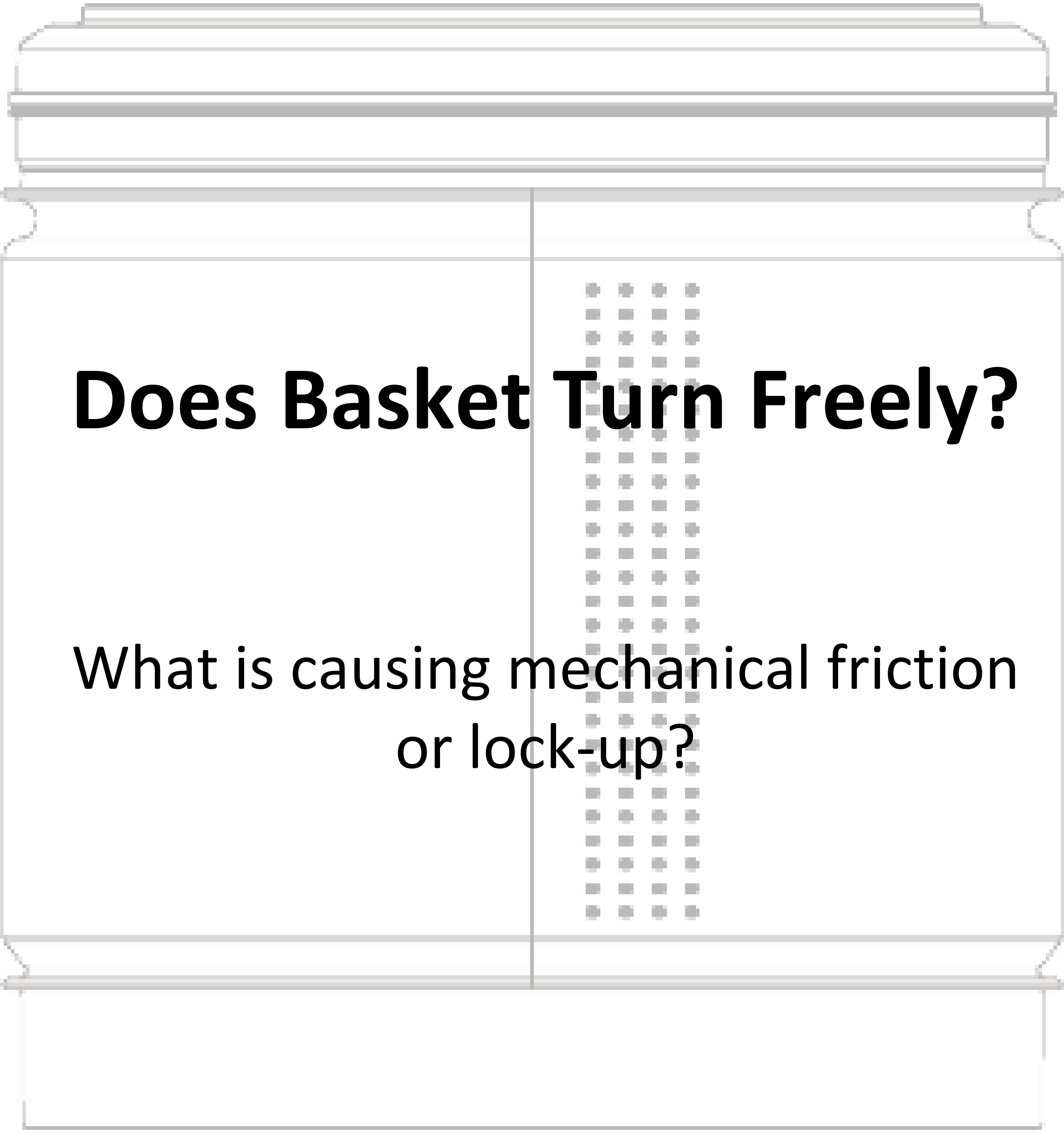
How to Check the Shifter

ALWAYS Run Diagnostics

Spin and Agitate Modes

- Speeds Workflow
- Proves Electrical System
- Reveals Mechanical Problems
- 1st Question the Techline asks

How to Check the Shifter

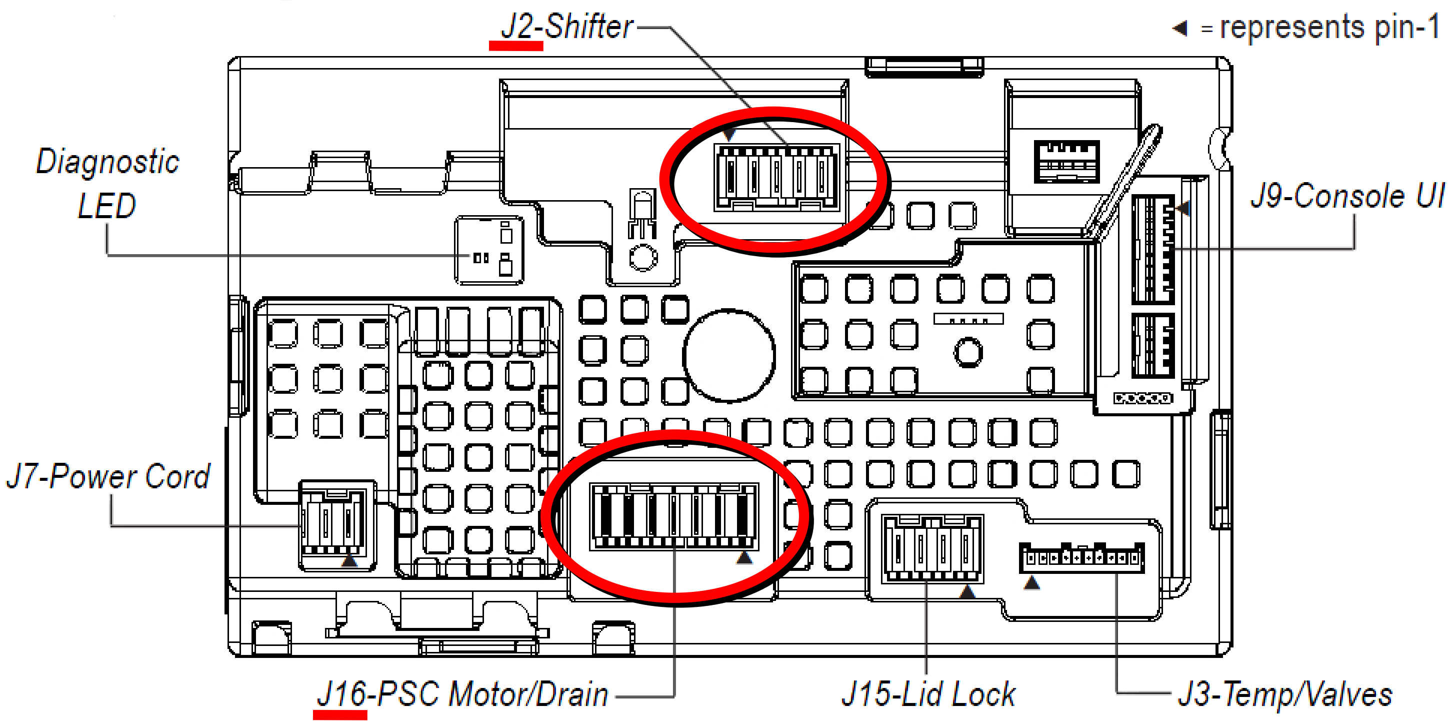


Does Basket Turn Freely?

What is causing mechanical friction or lock-up?

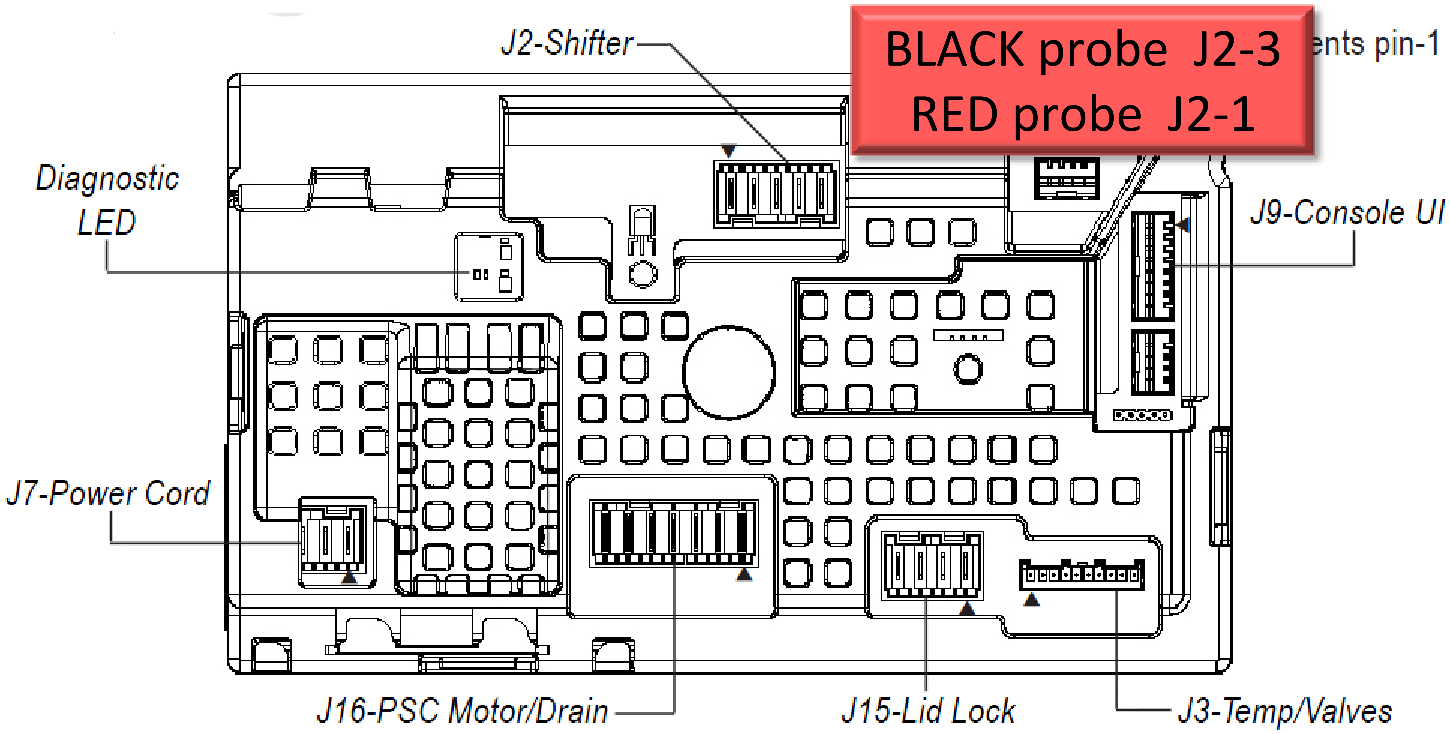
How to Check the Shifter

Verify Control Connections



How to Check the Shifter

Shifter Switch - DC Output



DC Voltage should toggle between 0 & +5Vdc

SPIN = +5 VDC AGITATE = 0 VDC

How to Check the Shifter

Shifter Motor - Resistance

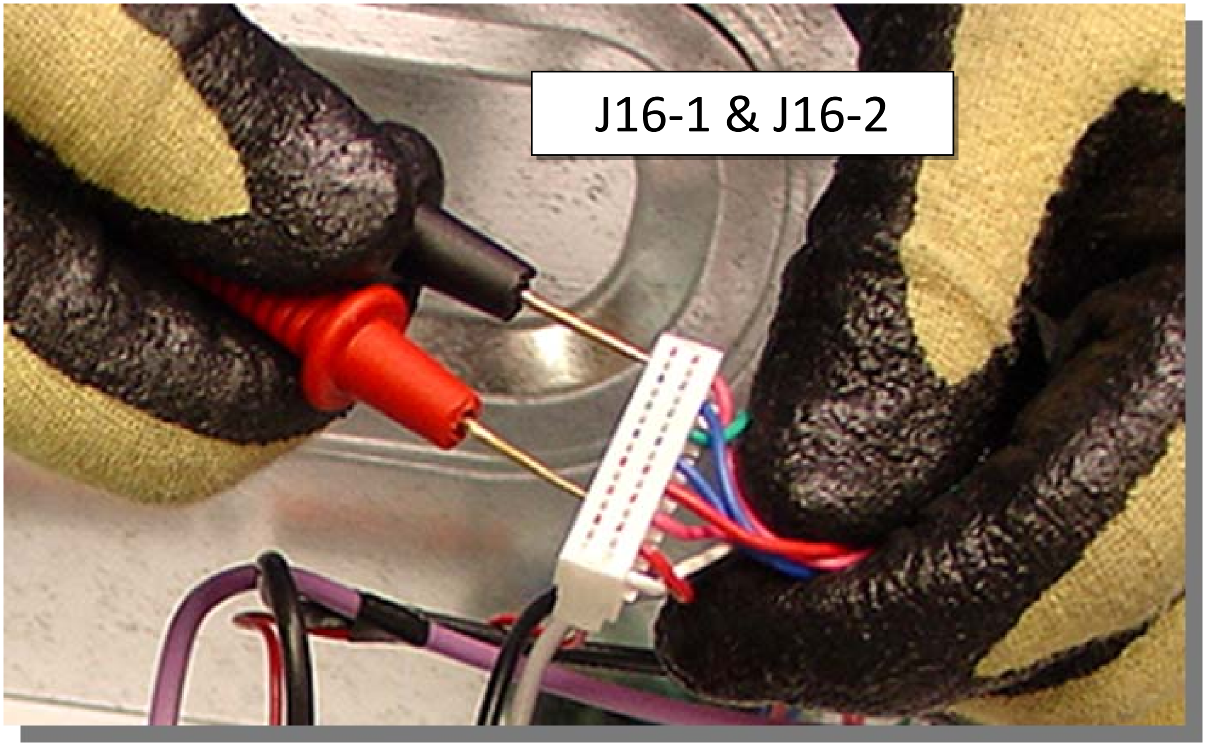


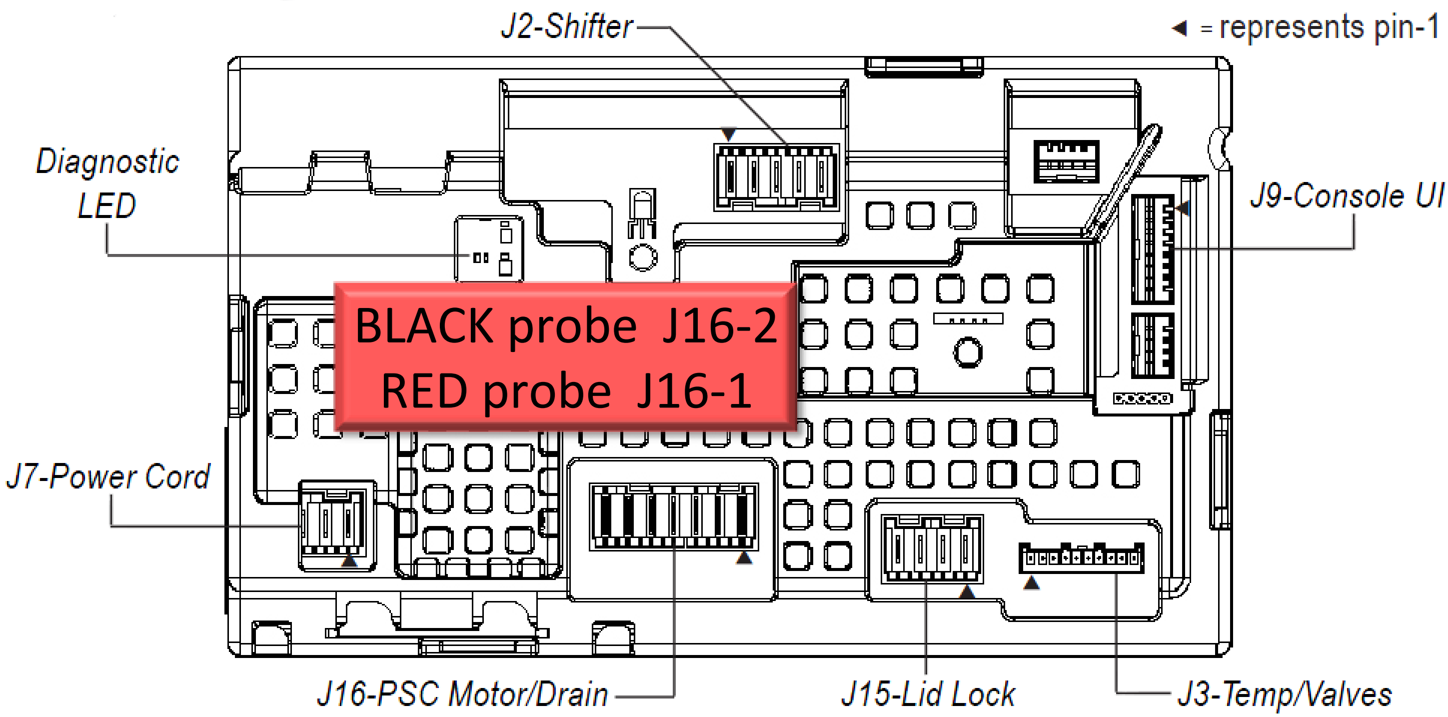
Image is an example only.

2k to 3k Ω = Good resistance through harness and shifter motor.

How to Check the Shifter

Shifter Motor - Control AC Output

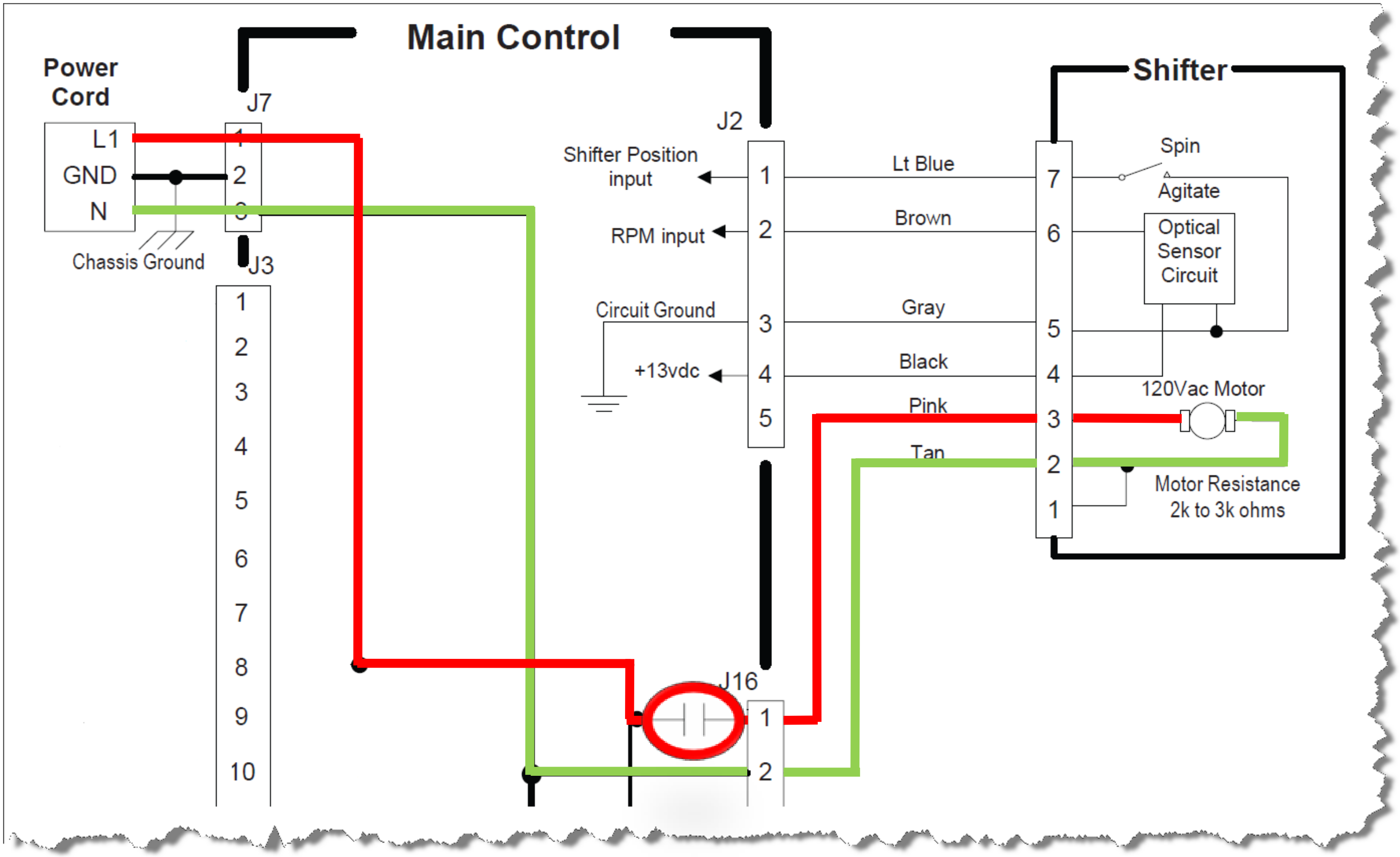
120 Vac



Use the MANUAL Diagnostic Test.
Switch between Spin and Agitate.

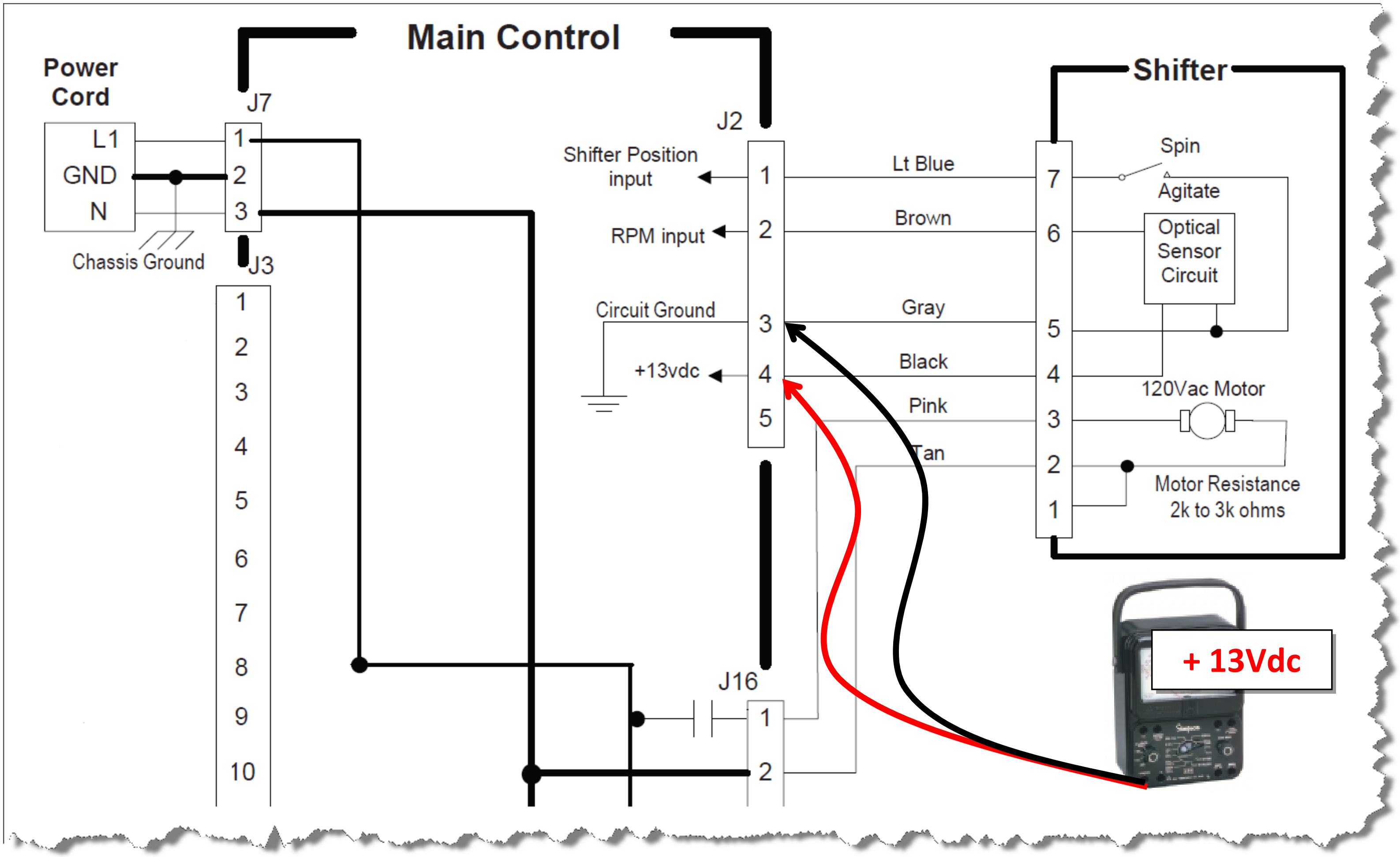
How to Check the Shifter

Shifter Motor - Circuit



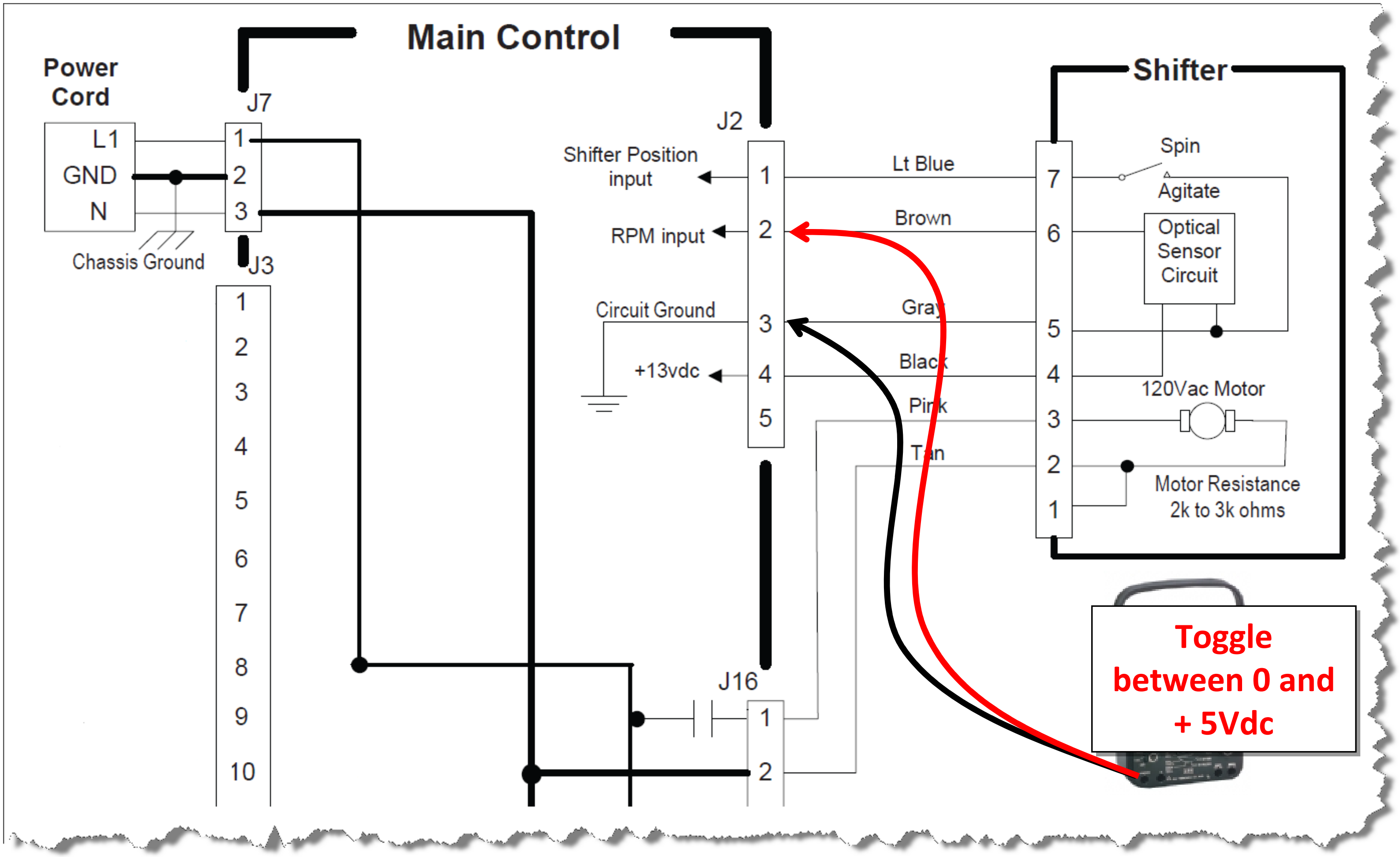
How to Check the Shifter

Optical Sensor Circuit



How to Check the Shifter

Optical Sensor Circuit



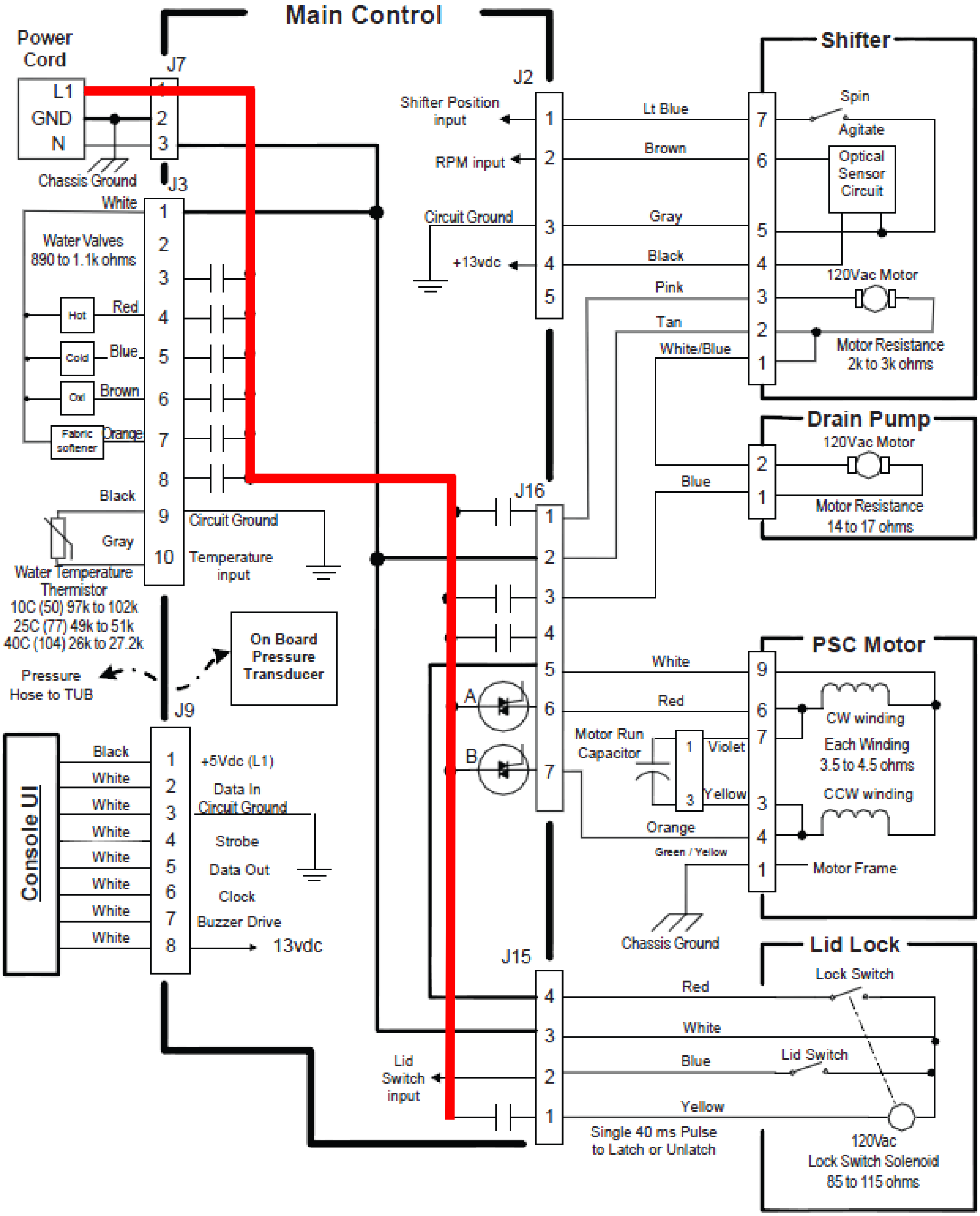
Slowly turn basket by hand

How to Check the Shifter

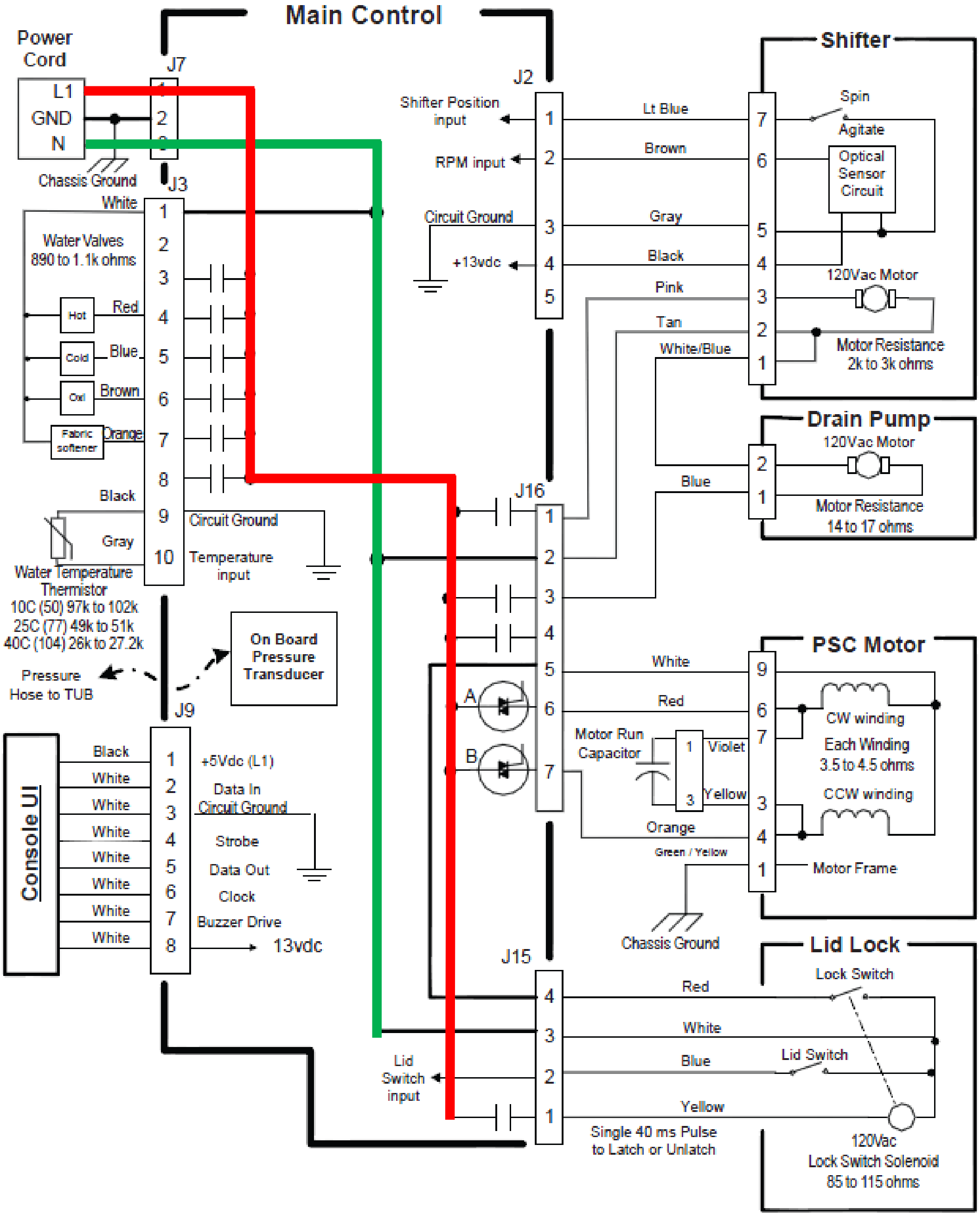
Ohm the Harness

Shifter to Main Control & Drain Pump
Shifter Connector Pin-2 to Main Control J16-2
Shifter Connector Pin-3 to Main Control J16-1
Shifter Connector Pin-4 to Main Control J2-4
Shifter Connector Pin-5 to Main Control J2-3
Shifter Connector Pin-6 to Main Control J2-2
Shifter Connector Pin-7 to Main Control J2-1

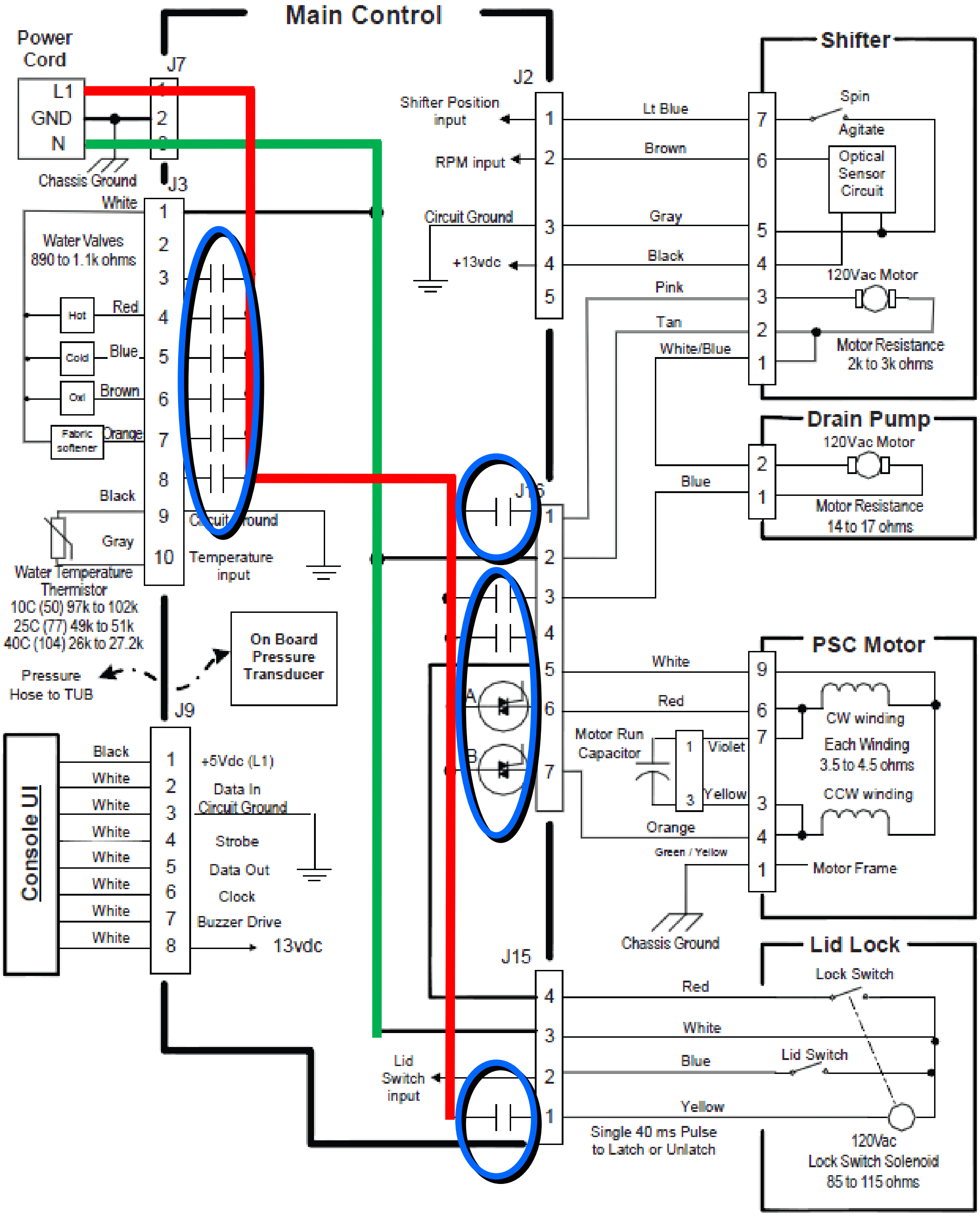
Wire Diagram



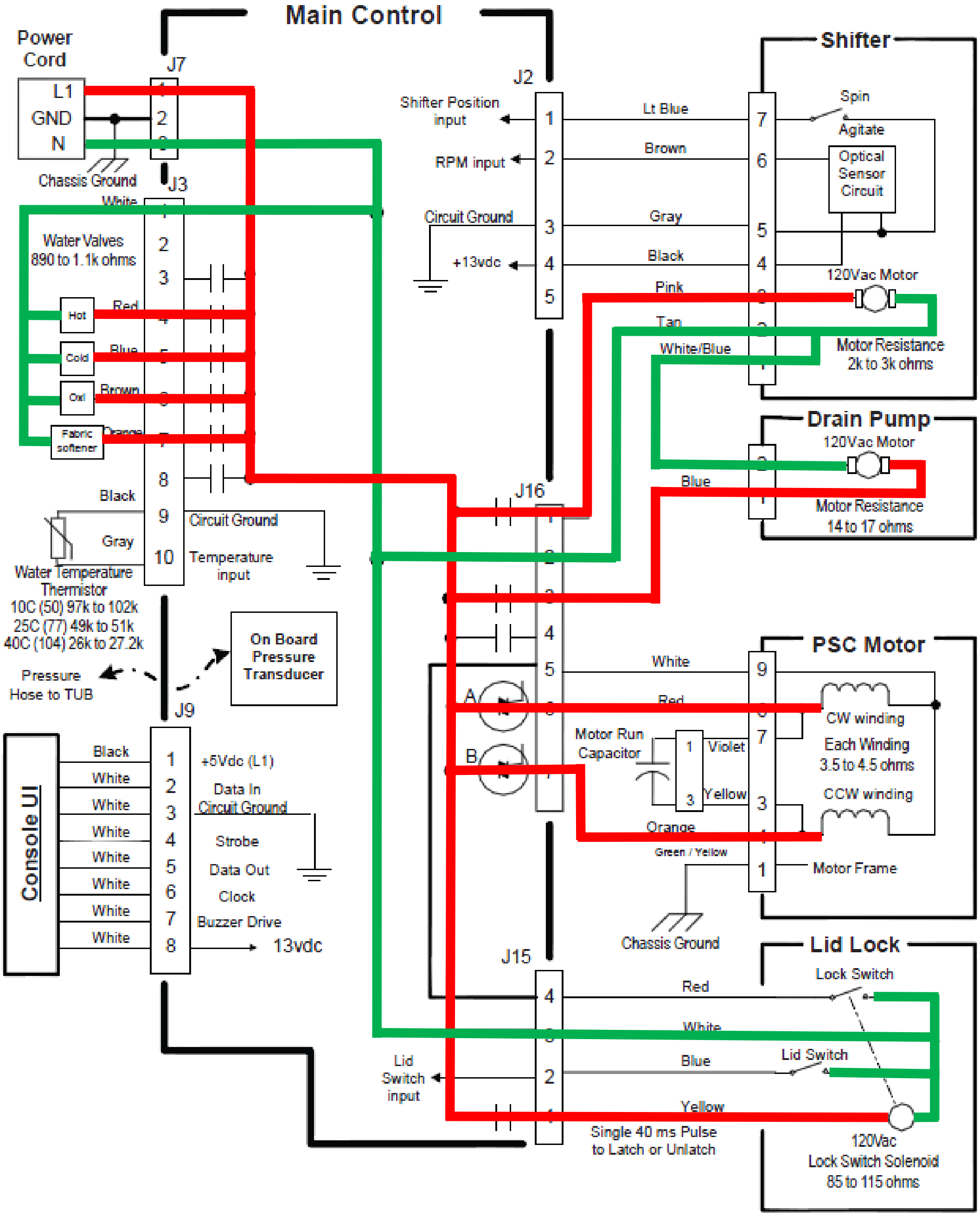
Wire Diagram



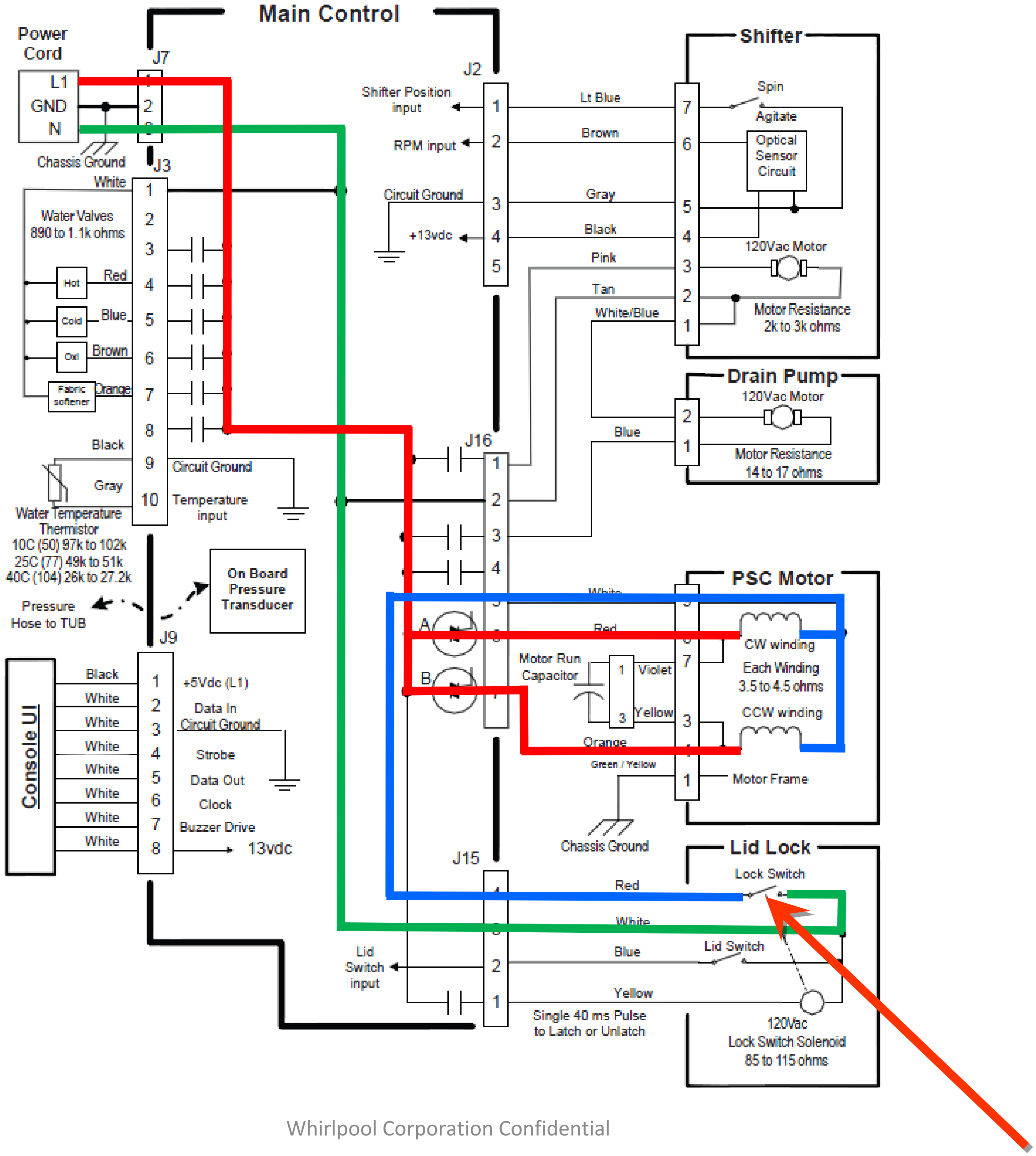
No Neutral Control Switches



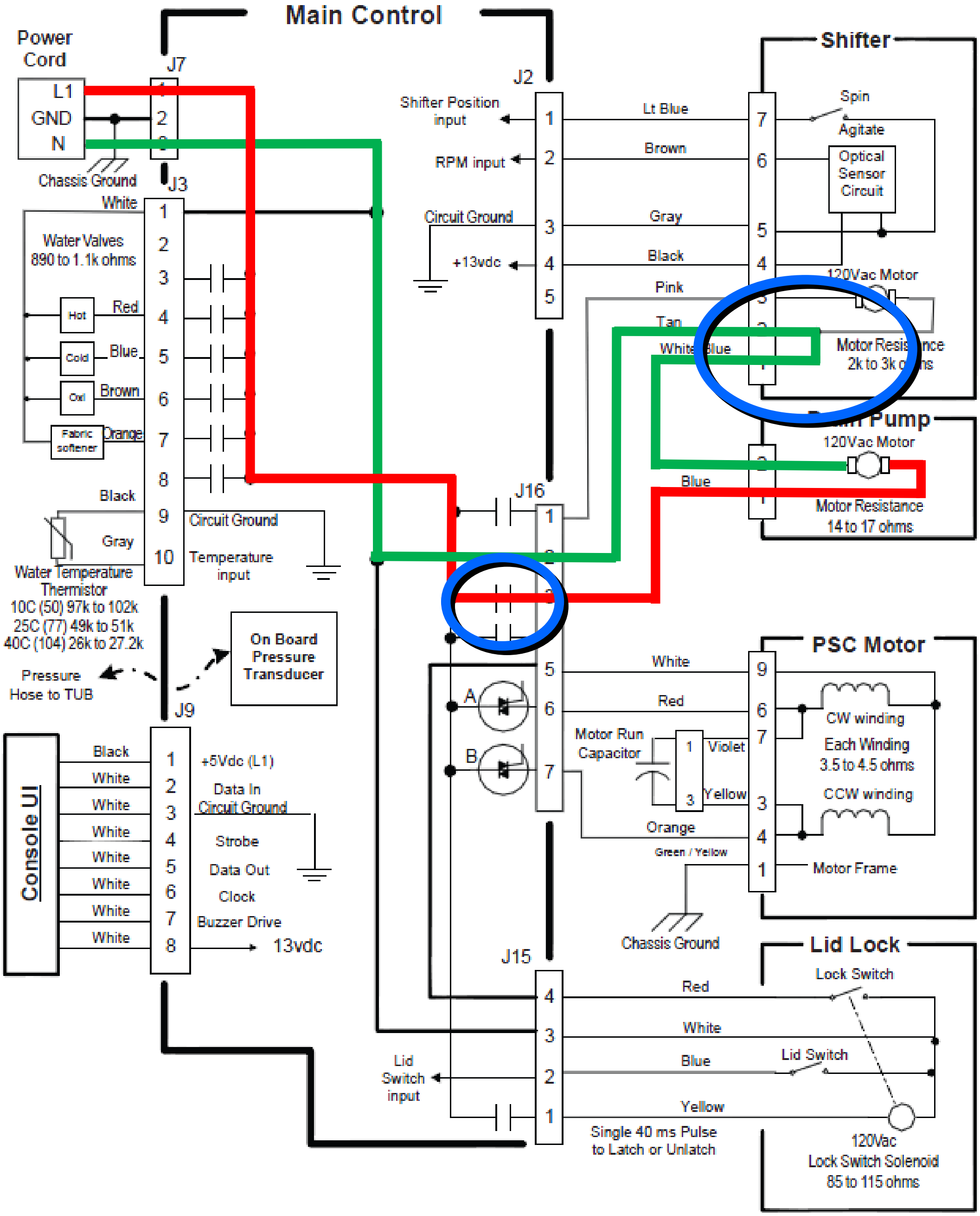
Line Voltage Paths



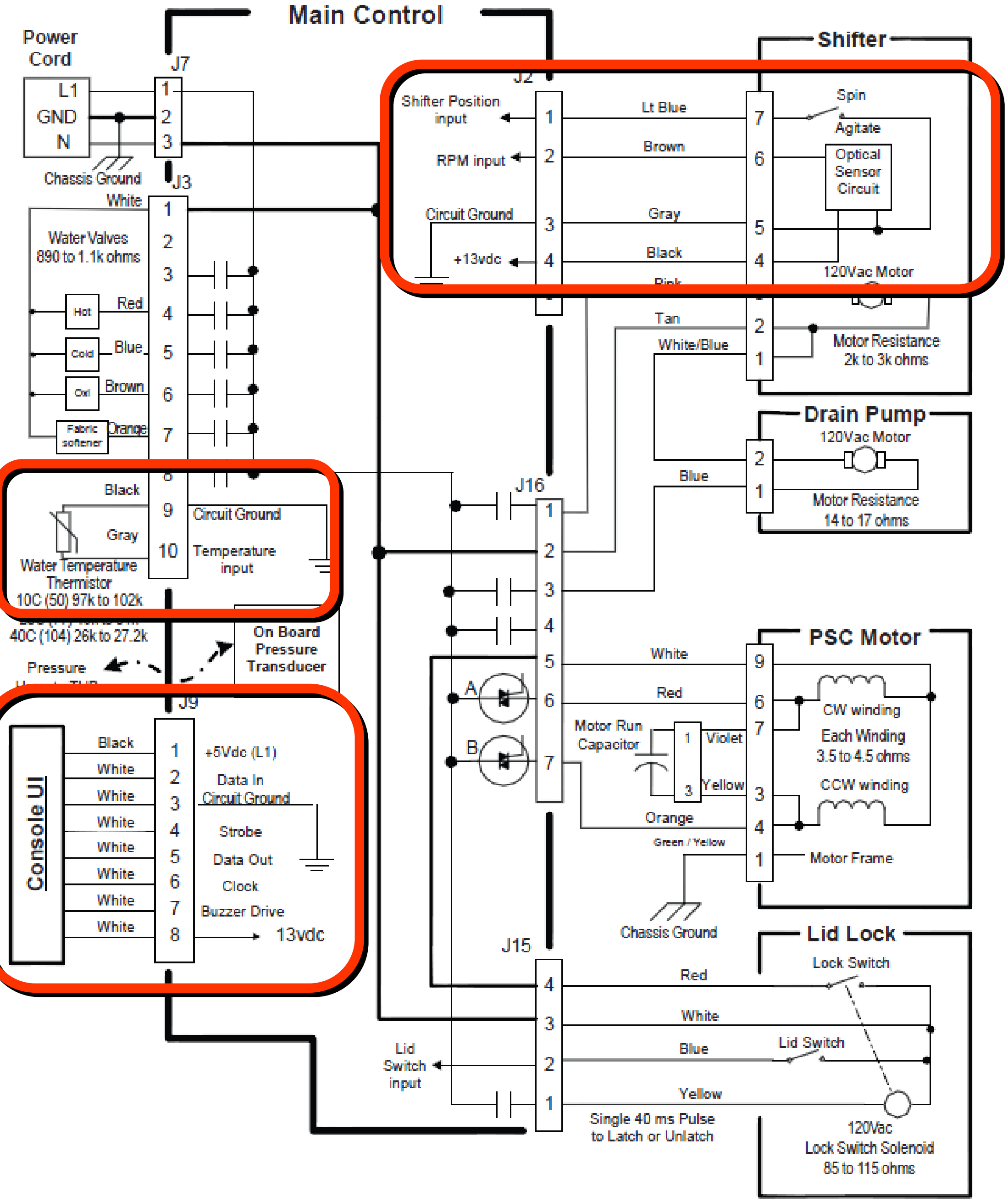
Drive Motor Neutral



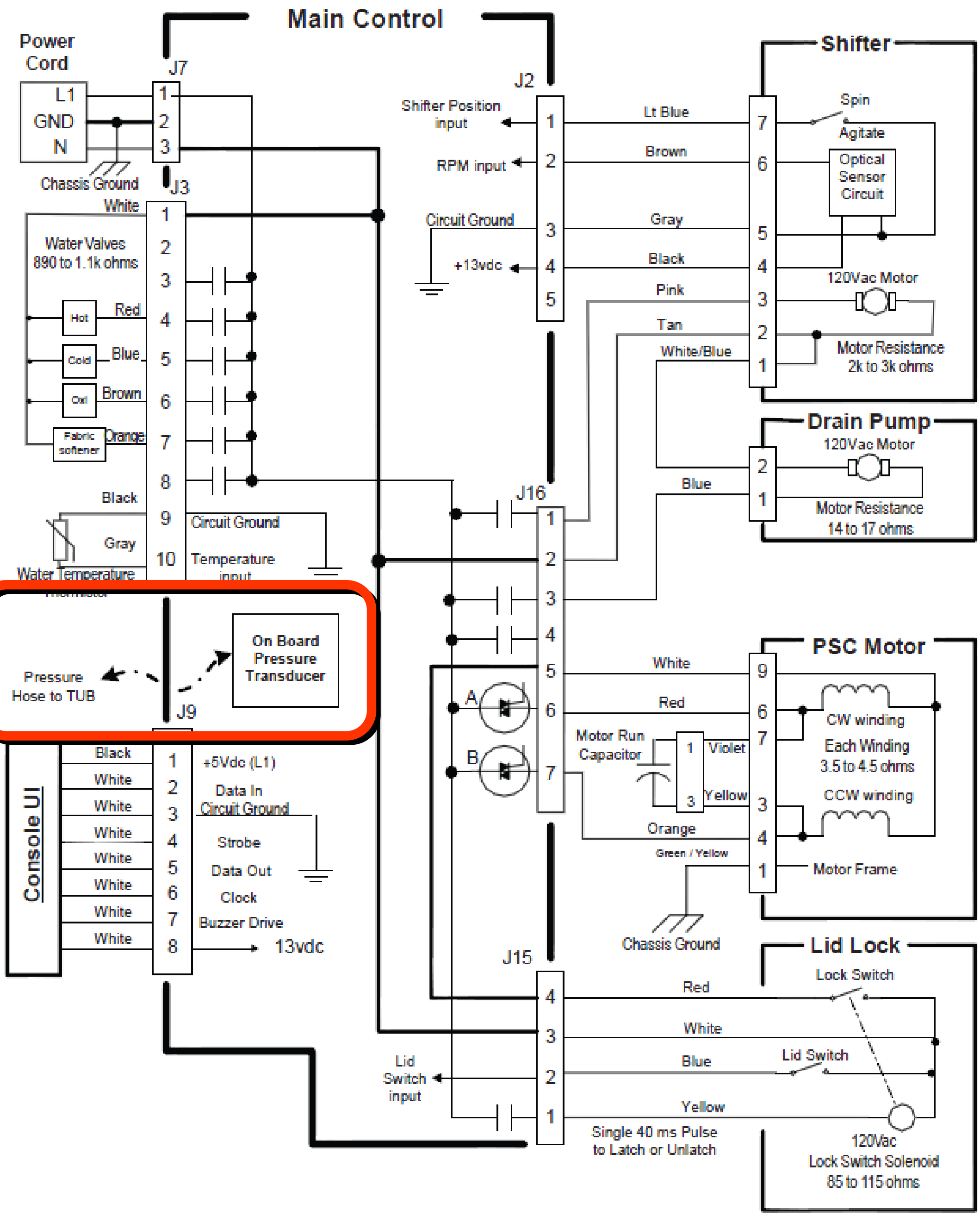
Drain Pump Neutral



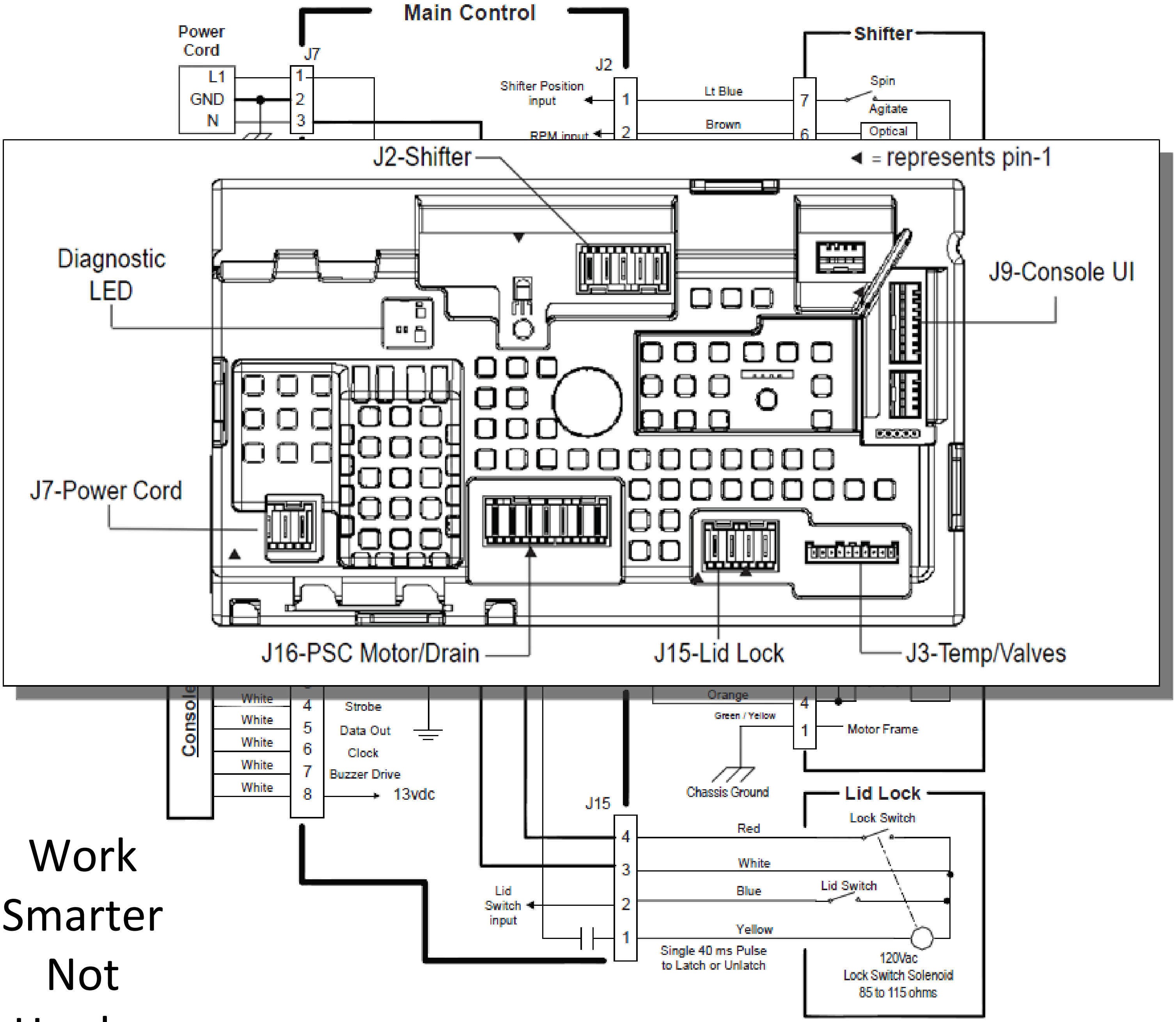
Low Voltage Circuits



Pressure Transducer

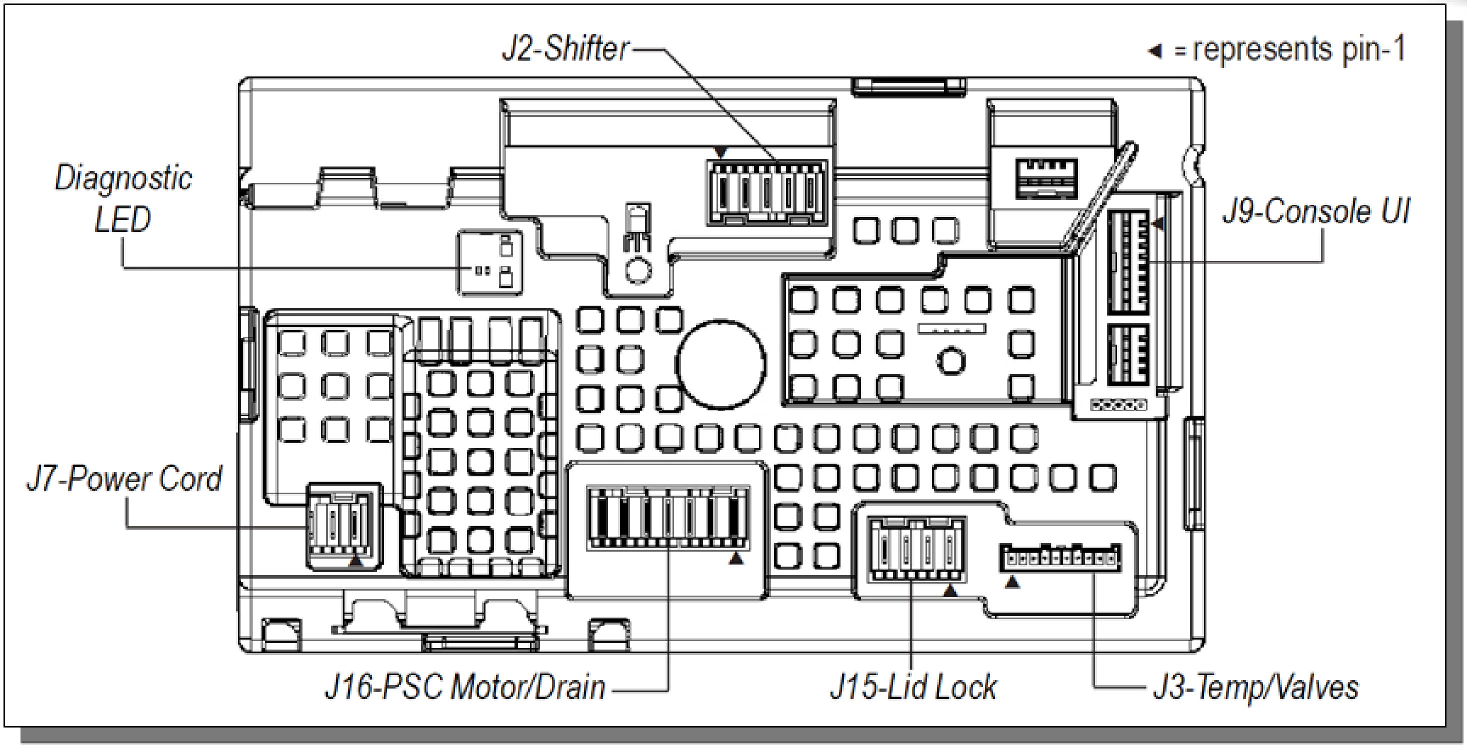


Test the Circuitry



Work Smarter Not Harder

Info in the Techsheet



Main Control Board Connectors and Pinouts

J2 (SHIFTER)

Pin	Wire	Function
J2-5		OPEN
J2-4	BLK	+13VDC
J2-3	GRY	-5VDC (CIRCUIT GND)
J2-2	BRN	RPM INPUT
J2-1	LT BLU	SHIFTER POSITION INPUT

J3 (TEMP / VALVES)

Pin	Wire	Function
J3-10	GRY	TEMP THERMISTOR INPUT
J3-9	BLK	TEMP THERMISTOR GND
J3-8		OPEN
J3-7	ORN	FAB-SOFT VALVE (L1)
J3-6	BRN	OXI VALVE (L1)
J3-5	BLU	COLD VALVE (L1)
J3-4	RED	HOT VALVE (L1)
J3-3		OPEN
J3-2		OPEN
J3-1	WHT	NEUTRAL

J7 (POWER CORD)

Pin	Wire	Function
J7-3	BLK	NEUTRAL
J7-2	GRN	CHASSIS GROUND
J7-1	BLK	L1

J9 (CONSOLE UI)

Pin	Wire	Function
J9-8	WHT	+13VDC
J9-7	WHT	BUZZER
J9-6	WHT	CLOCK
J9-5	WHT	DATA OUT
J9-4	WHT	STROBE
J9-3	WHT	-5VDC (CIRCUIT GND)
J9-2	WHT	DATA IN
J9-1	BLK	+5VDC

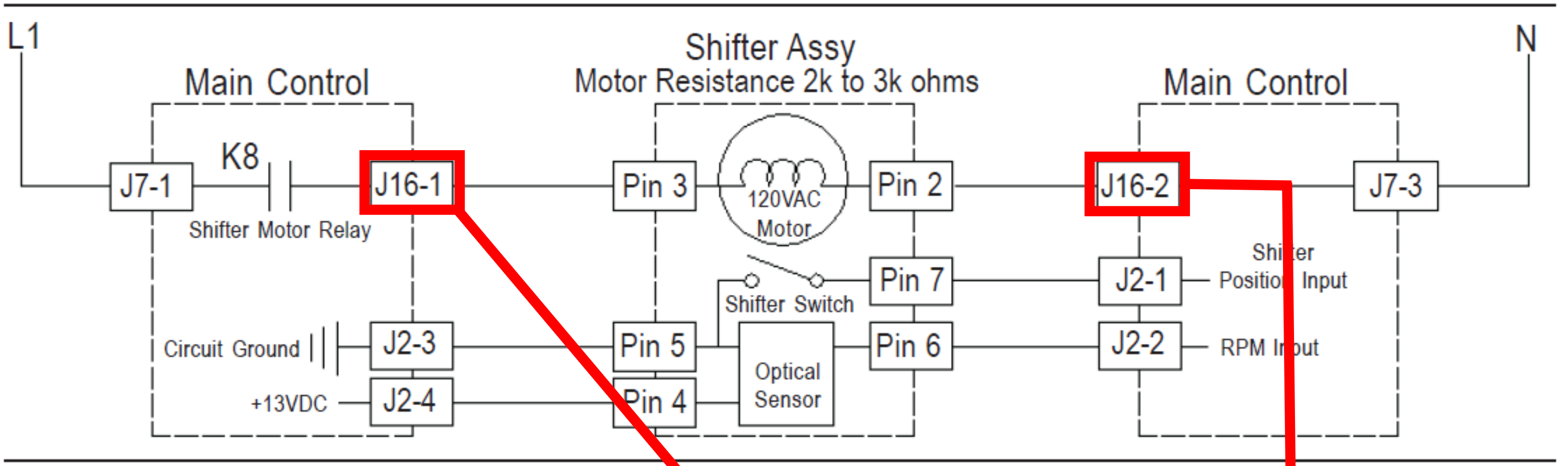
J15 (LID LOCK)

Pin	Wire	Function
J15-4	RED	LOCK SWITCH
J15-3	WHT	NEUTRAL
J15-2	BLU	LID SWITCH INPUT
J15-1	YEL	LOCK SWITCH SOLENOID (L1)

J16 (MOTOR / DRAIN)

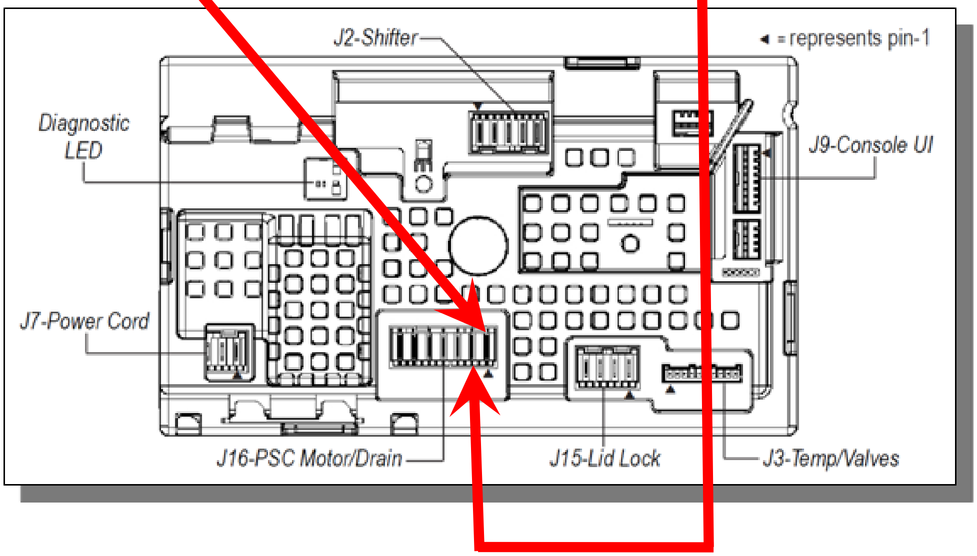
Pin	Wire	Function
J16-7	ORN	MOTOR CCW WINDING (L1)
J16-6	RED	MOTOR CW WINDING (L1)
J16-5	WHT	MOTOR (NEUTRAL)
J16-4		OPEN
J16-3	BLU	DRAIN PUMP MOTOR (L1)
J16-2	TAN	SHIFTER MOTOR (NEUTRAL)
J16-1	PNK	SHIFTER MOTOR (L1)

Strip Circuits

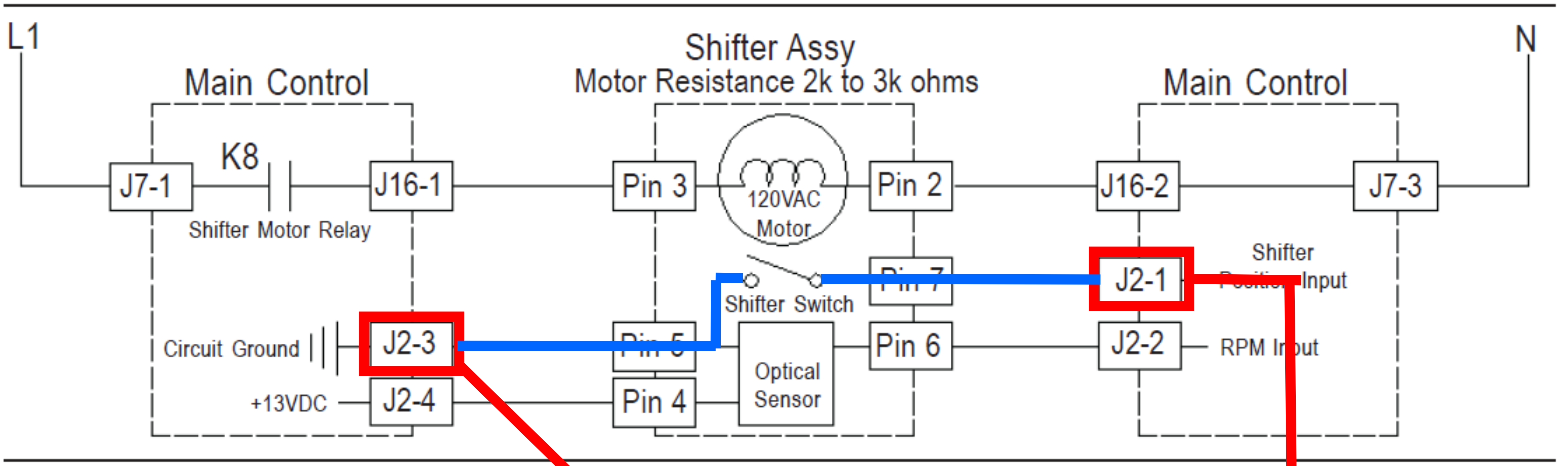


Shifter Assembly Strip Circuit



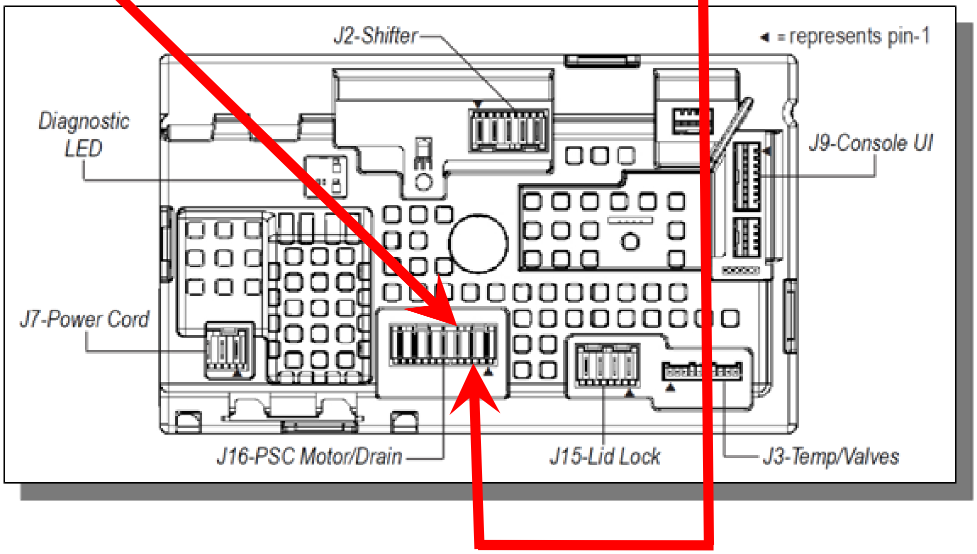


Strip Circuits



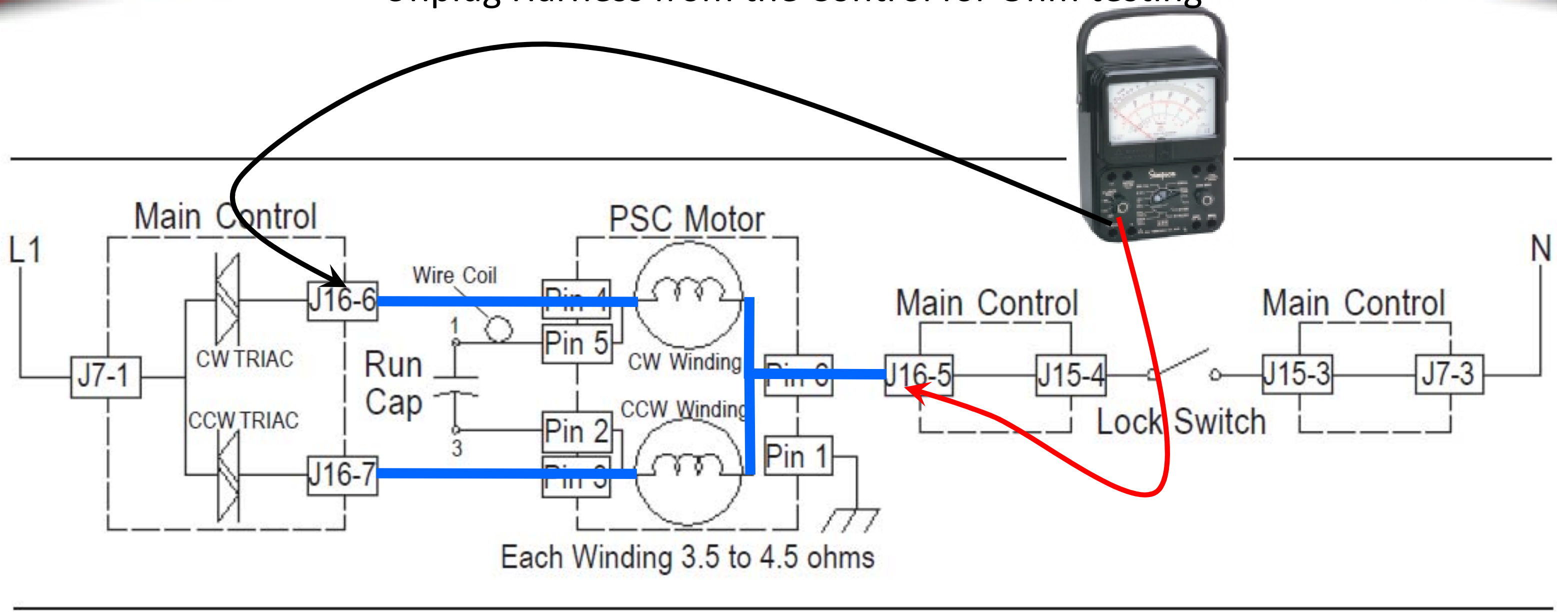
Shifter Assembly Strip Circuit





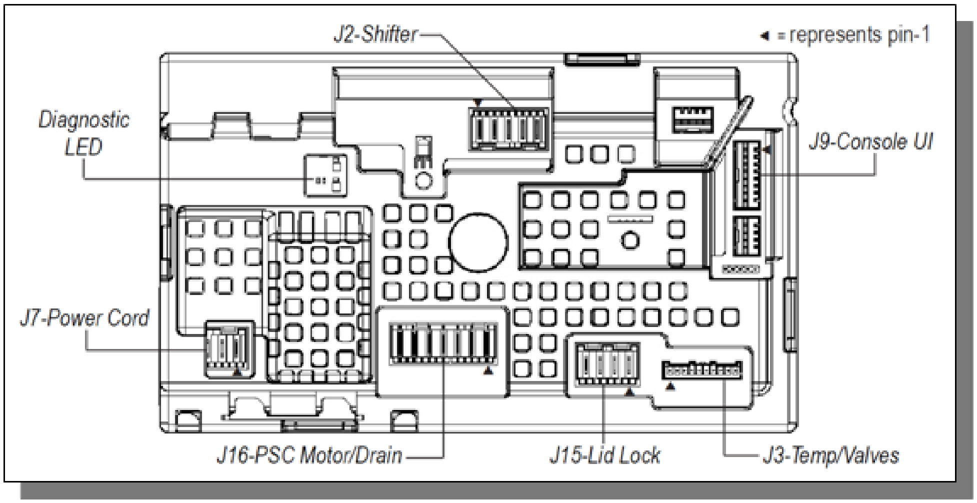
Strip Circuits

Unplug Harness from the Control for Ohm testing



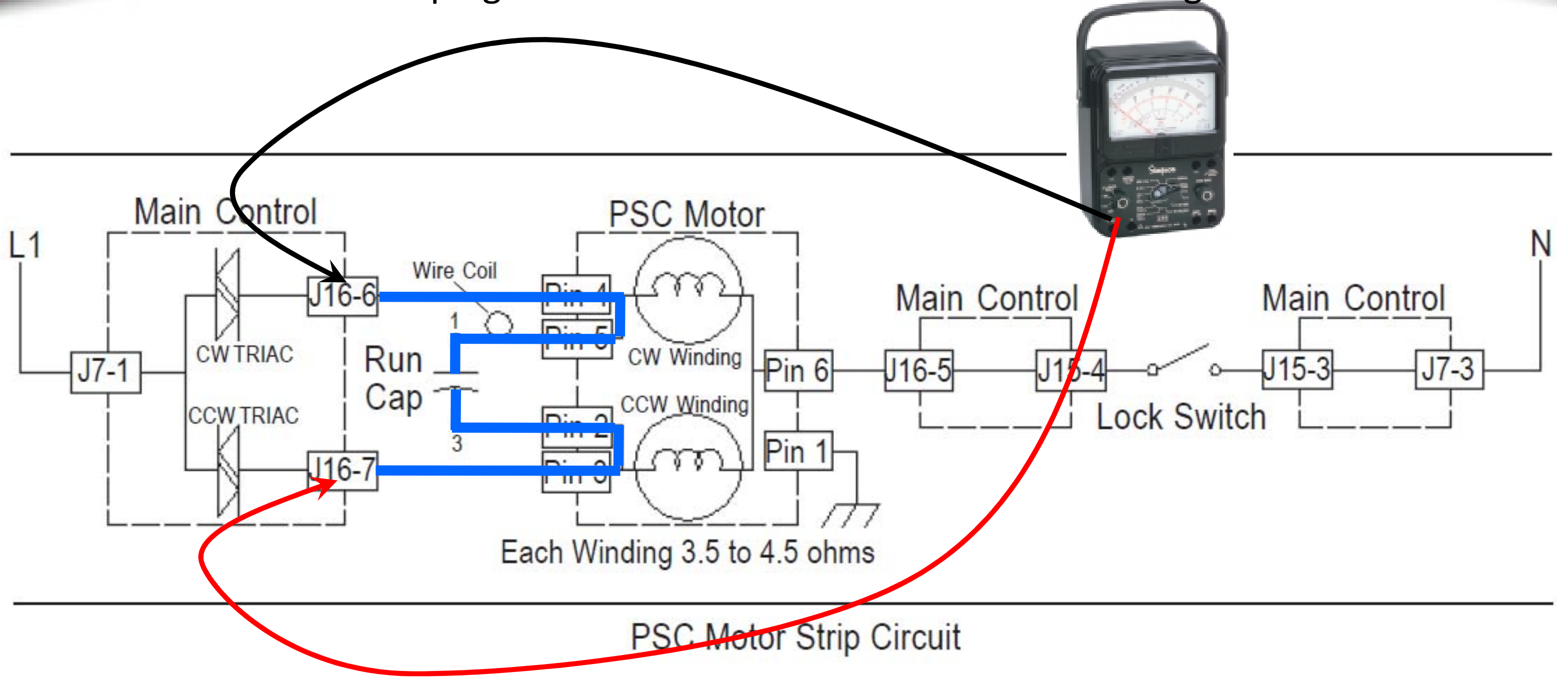
PSC Motor Strip Circuit



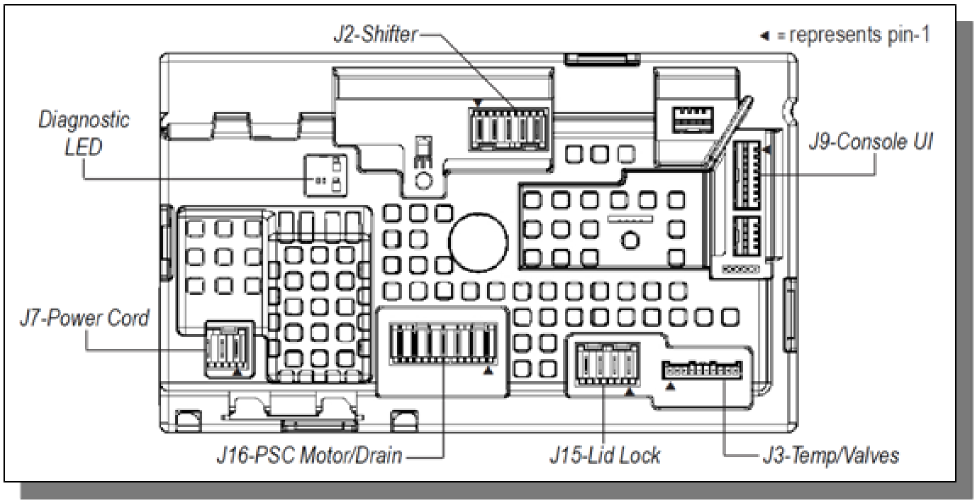


Strip Circuits

Unplug Harness from the Control for Ohm testing

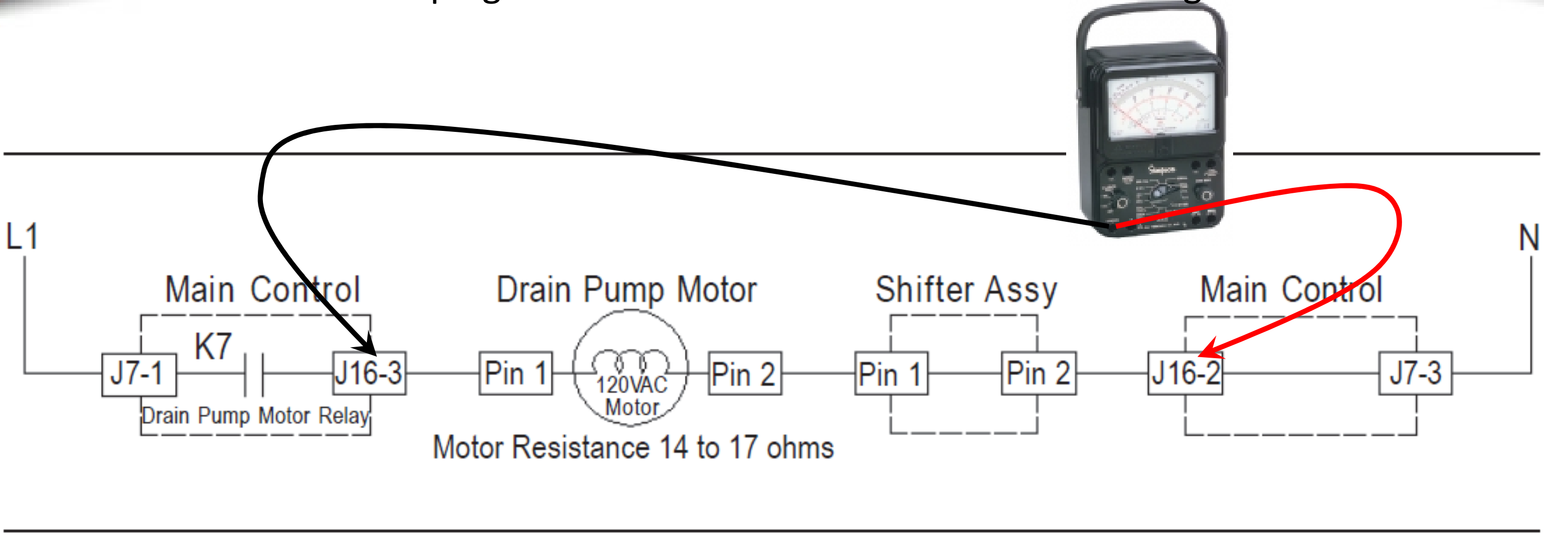






Strip Circuits

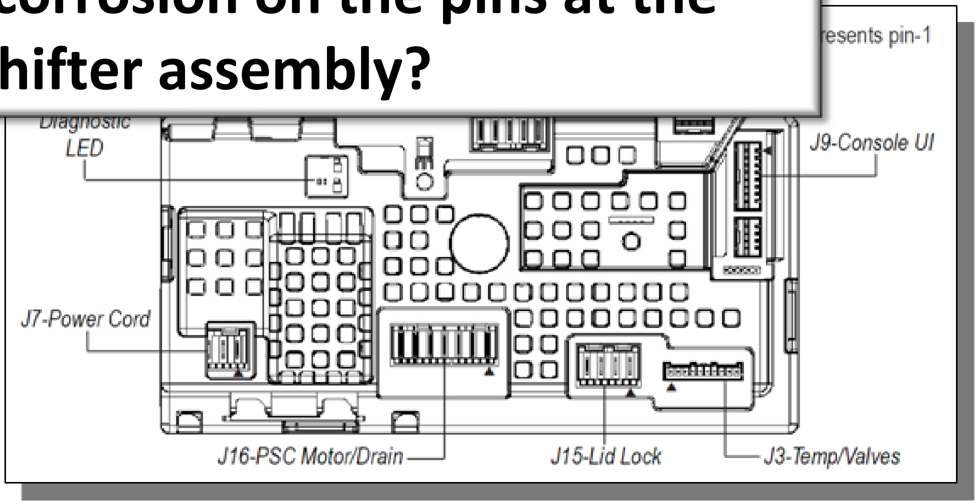
Unplug Harness from the Control for Ohm testing



Drain Pump Strip Circuit

What could be a *incorrect* diagnosis if there were corrosion on the pins at the shifter assembly?





Service Tips & Tricks



Cycles

SENSING

- When the START button is pressed, the washer will first perform a self-test on the lid lock mechanism. You will hear a click, the basket will make a slight turn, and the lid will unlock briefly before locking again.
- Once the lid has locked the second time, the washer will slowly spin the dry load to estimate the load size, and begin adding water.
- The washer will then move the load briefly, pause to allow water to soak in to the load, and resume adding water.
- This process may repeat until the correct amount of water has been added for the load.
- You may also hear water flowing through the dispenser, adding detergent to the load.

NOTE: The sensing light may also come on during the Soak and Wash portions of the cycle. This is normal.

Cycles

SOAK

- This portion of the cycle allows water to soak into the load for optimal cleaning.

WASH

- You will hear the impeller moving the load. Unlike traditional washers, the load is not covered with water. Low-water cleaning means concentrated cleaning. Rather than diluting detergent as done in an agitator-style washer, this washer delivers the detergent directly to the soils.
- The motor sounds may change at different stages in the cycle.
- The wash time is determined by the selected soil level.

Cycles

RINSE

- You will hear sounds similar to the wash cycle as the washer rinses and moves the load.
- Fabric softener will be added if the Fabric Softener option was selected.

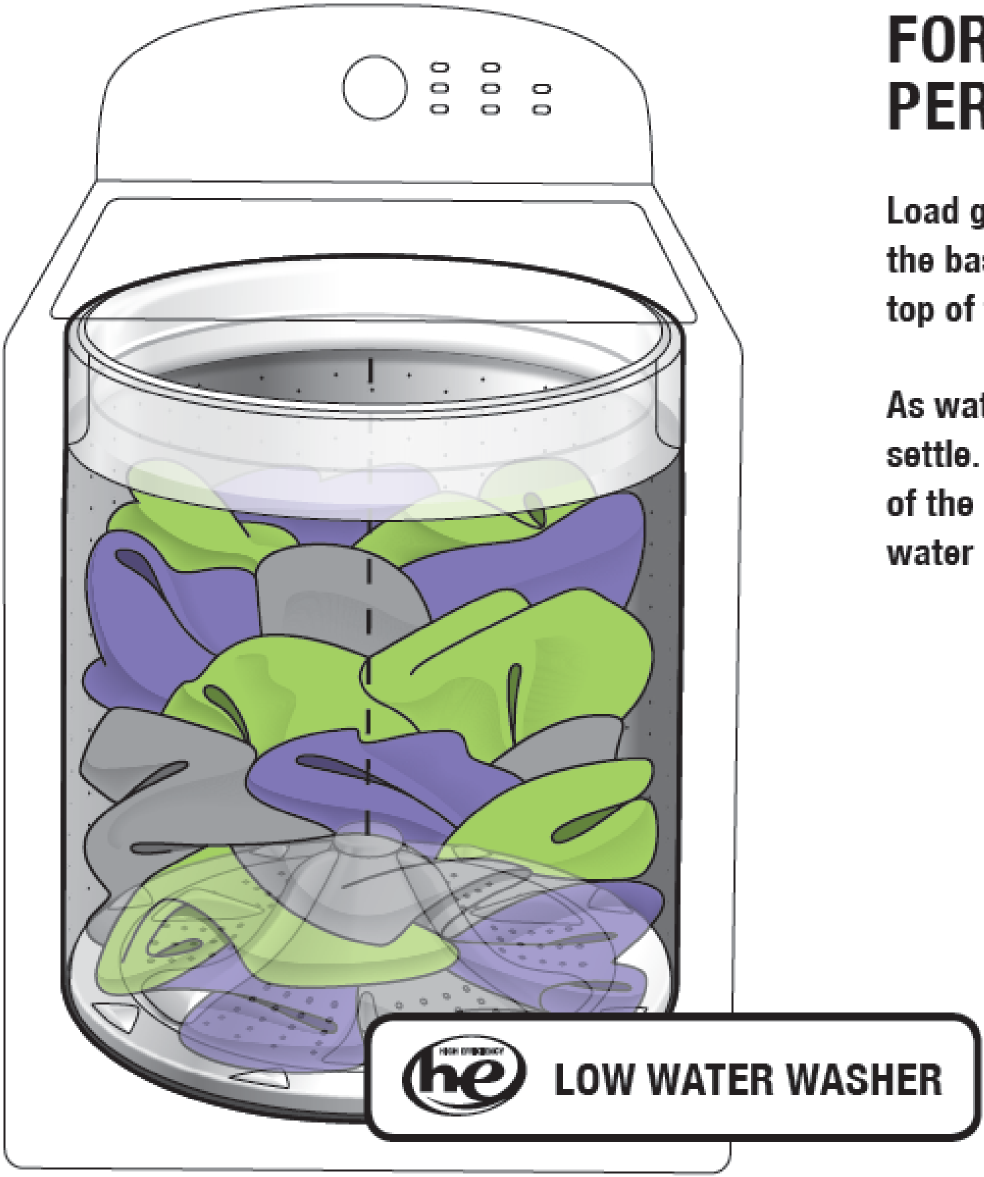
SPIN

The washer spins the load at increasing speeds for proper water removal, based on the selected cycle and spin speed.

Cycle Chart

Items to wash:	Cycle:	Wash/Rinse Temperature:	Spin Speed:	Soil Level:	Available Options:	Cycle Details:
Machine-wash silks, hand-wash fabrics	Delicates	Hot/Cold Warm/Cold **Cool/Cold** Cold/Cold Tap Cold/Cold	High **Low** No Spin	Extra Heavy Heavy Medium **Light**	Deep Clean Extra Rinse Delay Wash Eco Presoak	Use this cycle to wash lightly soiled garments indicating "Machine Washable Silks" or "Gentle" cycle on the care label. Place small items in mesh garment bags before washing.
Small loads, cottons, polyester, perm press	Quick Wash	Hot/Cold **Warm/Cold** Cool/Cold Cold/Cold Tap Cold/Cold	**High** Low No Spin	Extra Heavy Heavy Medium **Light**	Deep Clean Extra Rinse Delay Wash Eco Presoak	Use this cycle to wash small, lightly soiled loads of 2-3 items that are needed in a hurry.
No-iron fabrics, cottons, perm press, linens, synthetics	Casual	Hot/Cold **Warm/Cold** Cool/Cold Cold/Cold Tap Cold/Cold	**High** Low No Spin	Extra Heavy Heavy **Medium** Light	Deep Clean Extra Rinse Delay Wash Eco Presoak	Use this cycle to wash loads of no-iron fabrics such as sport shirts, blouses, casual business clothes, permanent press, and blends.
Cottons, linens, and mixed garment loads	Normal	Hot/Cold **Warm/Cold** Cool/Cold Cold/Cold Tap Cold/Cold	**High** Low No Spin	Extra Heavy Heavy **Medium** Light	Deep Clean Extra Rinse Delay Wash Eco Presoak	Use this cycle for normally soiled cottons and mixed fabric loads.
Large items such as sleeping bags, small comforters, jackets	Bulky Items	Hot/Cold **Warm/Cold** Cool/Cold Cold/Cold Tap Cold/Cold	High **Low** No Spin	Extra Heavy Heavy **Medium** Light	Extra Rinse Delay Wash Eco Presoak	Use this cycle to wash large items such as jackets and small comforters. The washer will fill with enough water to wet down the load before the wash portion of the cycle begins. Do not overload basket.
Sturdy fabrics, colorfast items, towels, lightly-soiled colored clothing	Heavy Duty	**Hot/Cold** Warm/Cold Cool/Cold Cold/Cold Tap Cold/Cold	**High** Low No Spin	**Extra Heavy** Heavy Medium Light	Deep Clean Extra Rinse Delay Wash Eco Presoak	Use this cycle for heavily soiled or sturdy items. Water-level sensing process may take longer for some items than for others because they will absorb more water than other fabric types.
Heavily soiled white fabrics	Whites	**Hot/Cold** Warm/Cold Cool/Cold Cold/Cold Tap Cold/Cold	**High** Low No Spin	**Extra Heavy** Heavy Medium Light	Deep Clean **Extra Rinse** Delay Wash Eco Presoak	Extra Rinse is a default option, but may be turned off. For maximum soil removal use liquid chlorine bleach.
Swimsuits	Rinse & Spin	Hot/Cold Warm/Cold **Cool/Cold** Cold/Cold Tap Cold/Cold	**High** Low No Spin			Combines a deep rinse and high speed spin for loads requiring an additional rinse cycle or to complete a load after power interruption. Also use for loads that require rinsing only.

Loading



FOR BEST PERFORMANCE

Load garments evenly around the basket no higher than the top of the stainless steel.

As water enters, garments settle. It is normal for some of the load to be above water line.



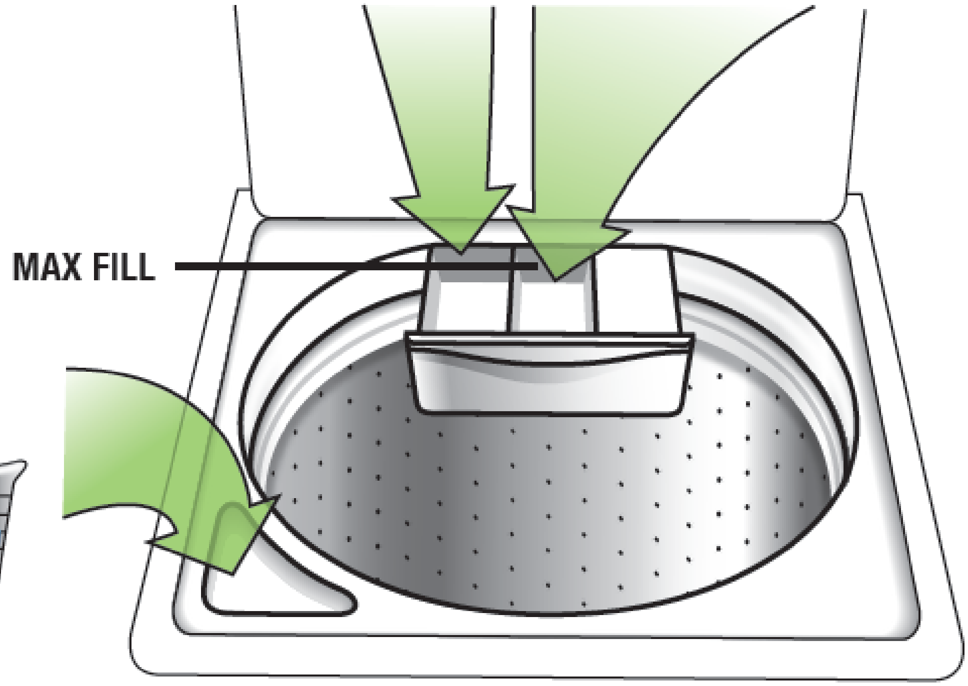
Chemicals

FOR DISPENSER LOADING

Use HE Detergent.

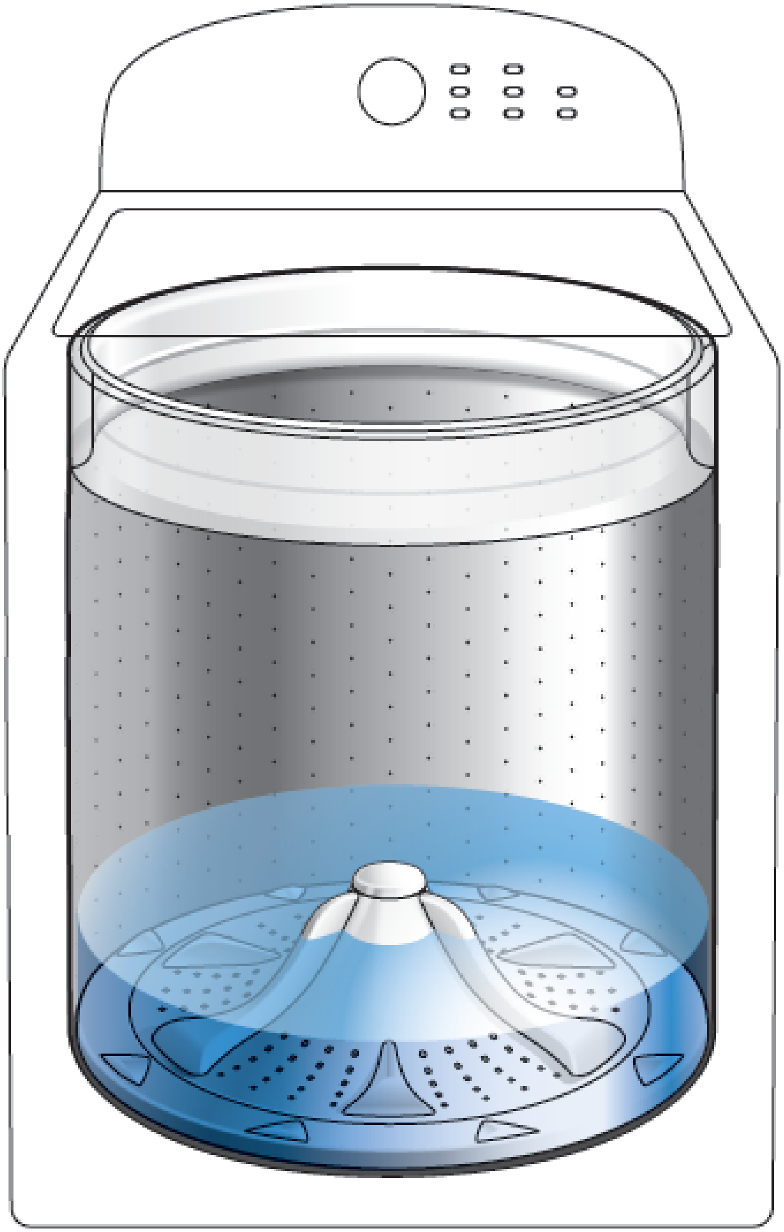
"Fabric Softener" option must be selected when using fabric softener.



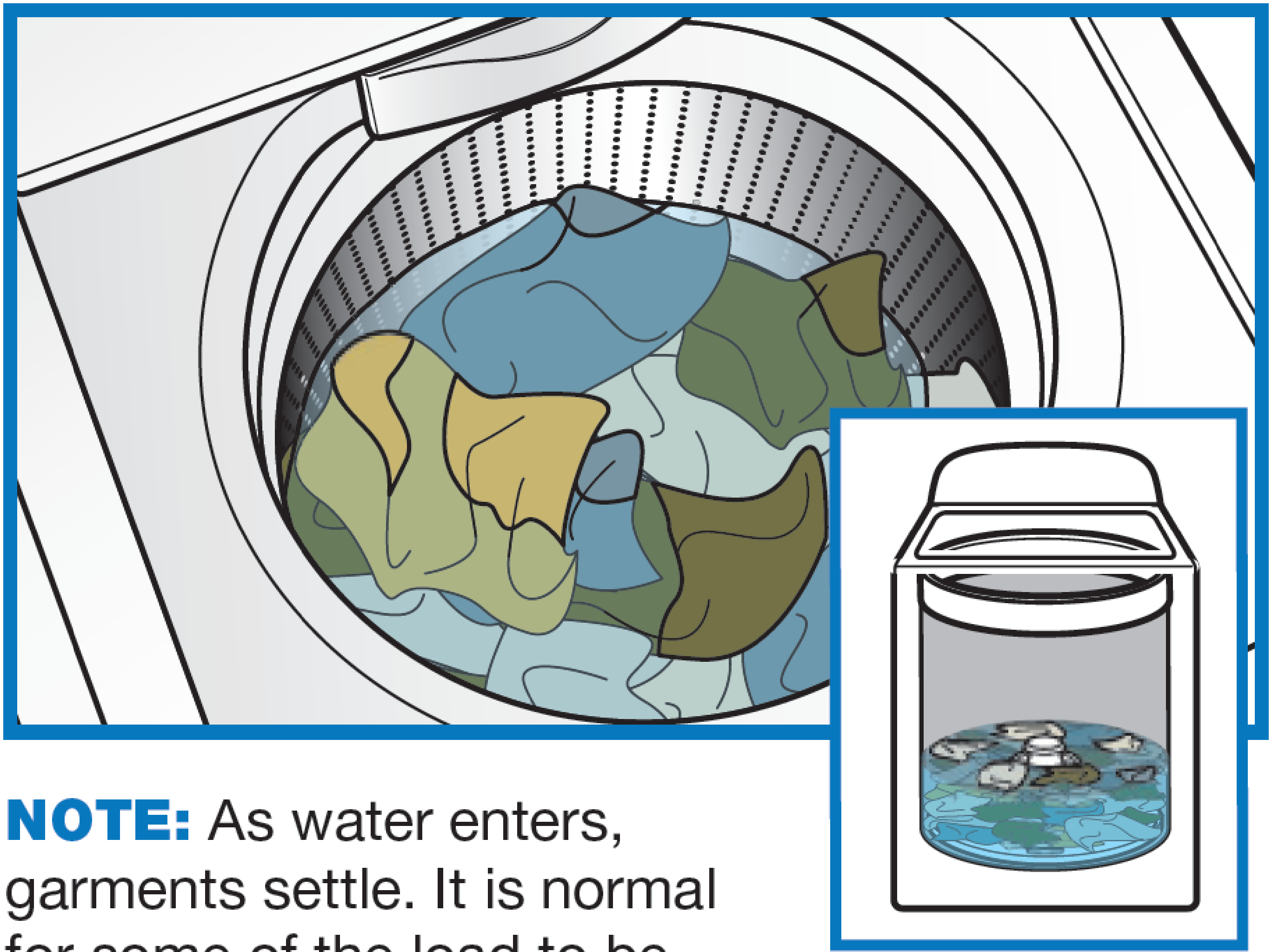




Water Level

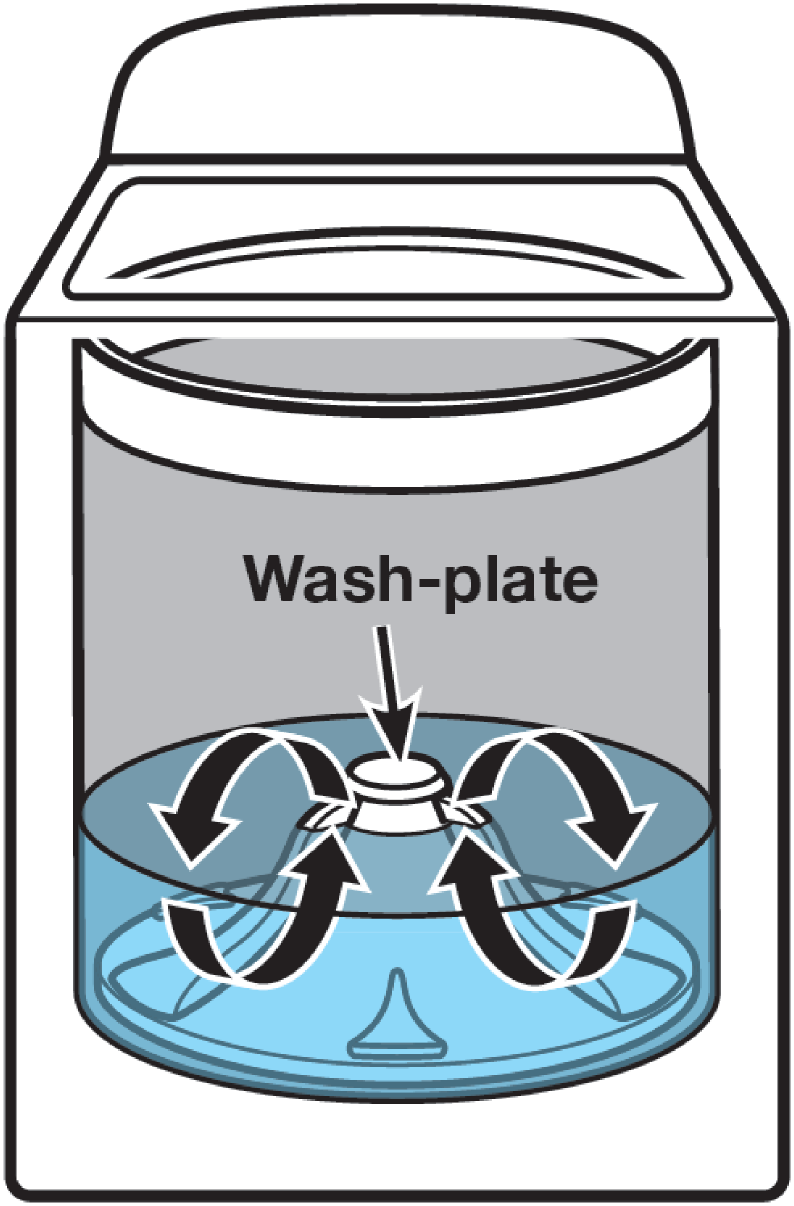


Clothes Saturation



NOTE: As water enters, garments settle. It is normal for some of the load to be above water line.

Cleaning Action

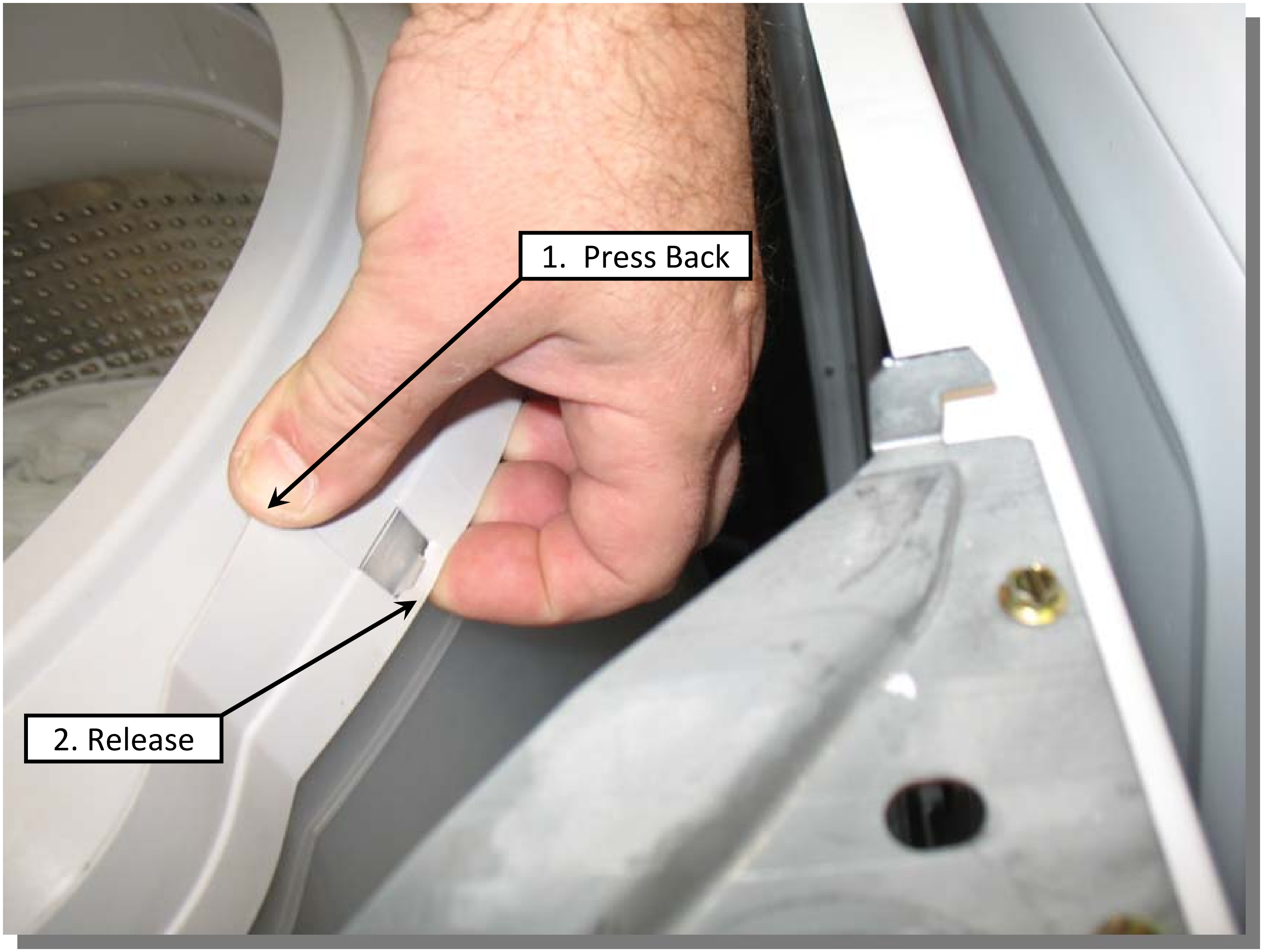


Tight Top??



Completely remove the hinge

Tub Ring



Suspension Ball



1) Top Ball not greased

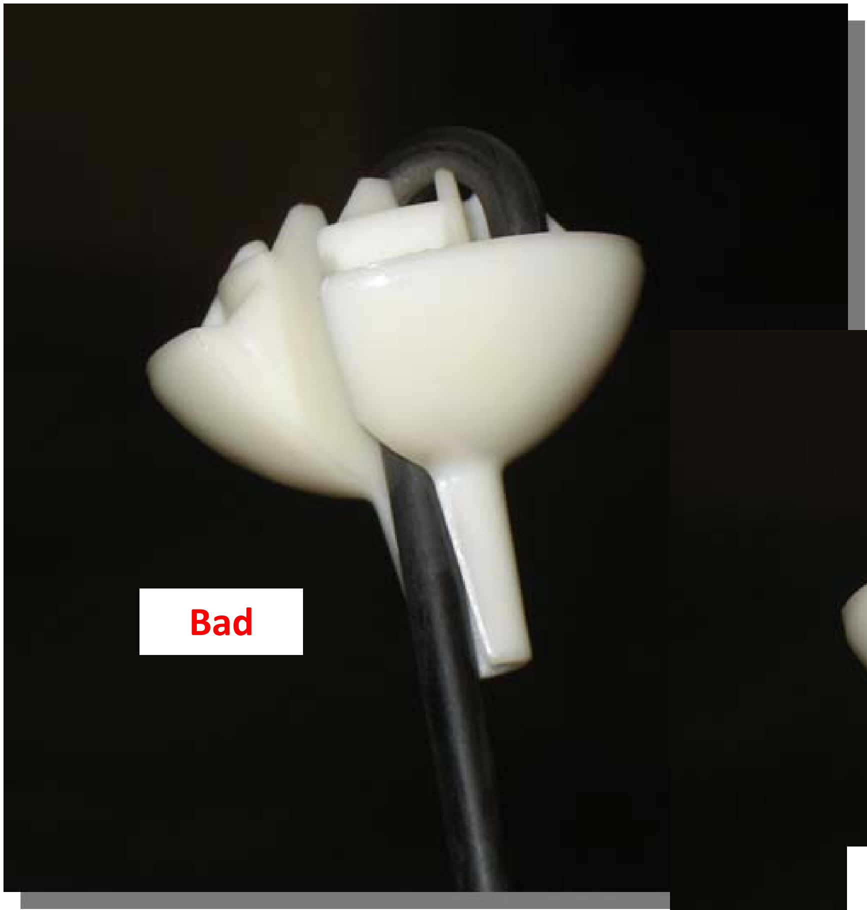


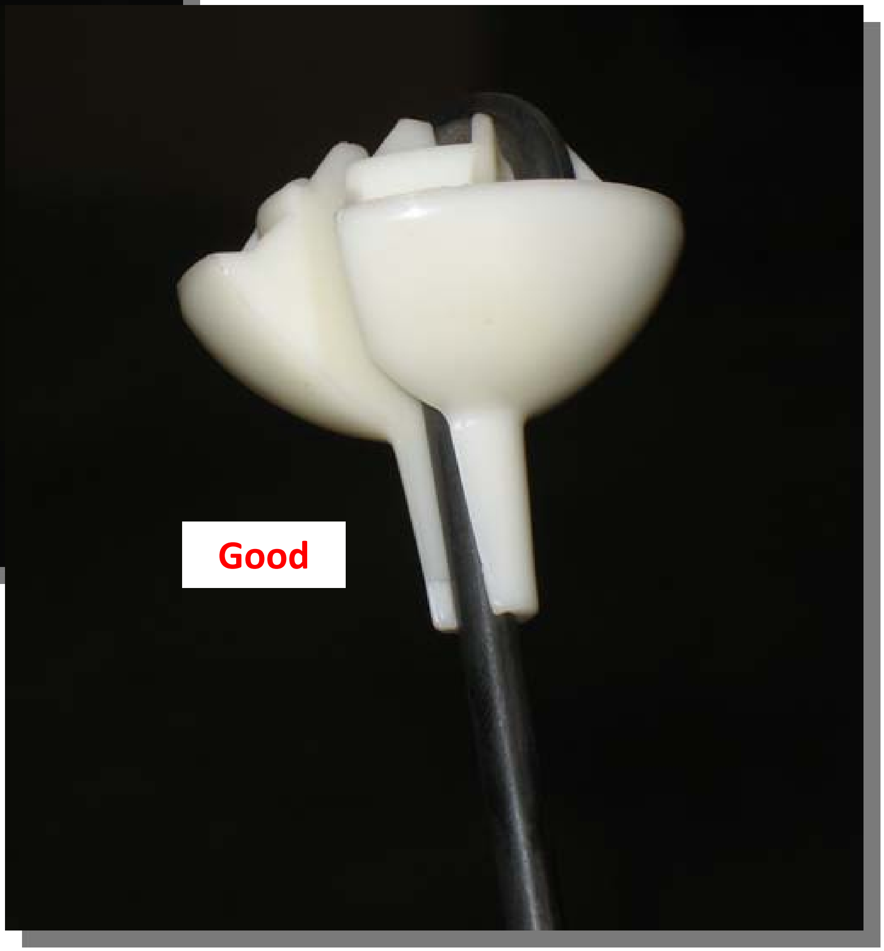


2) 90° Angles

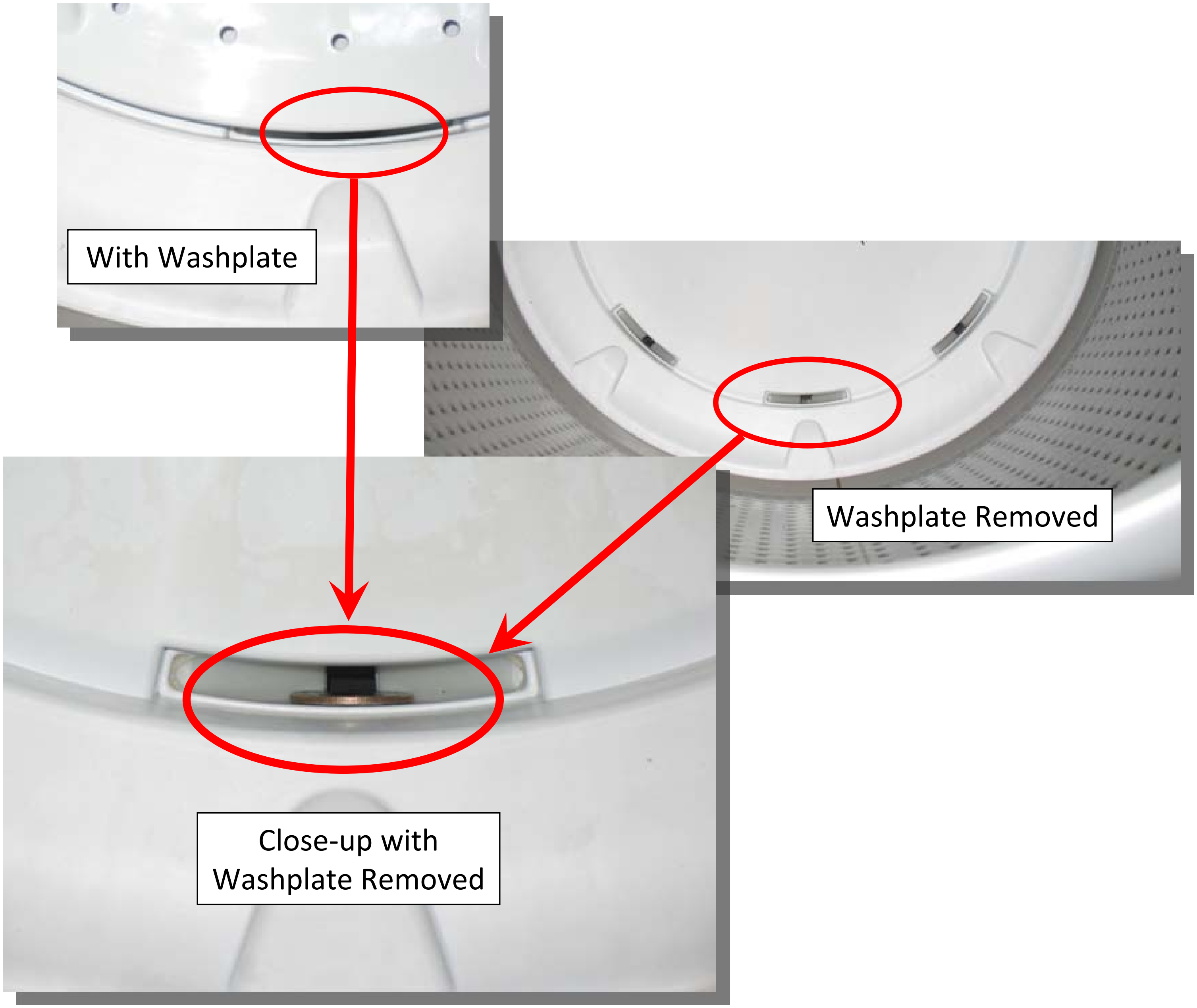
Suspension Ball

3) Must engage rod





Coin Trap



With Washplate
Washplate Removed
Close-up with
Washplate Removed

Pump Hood

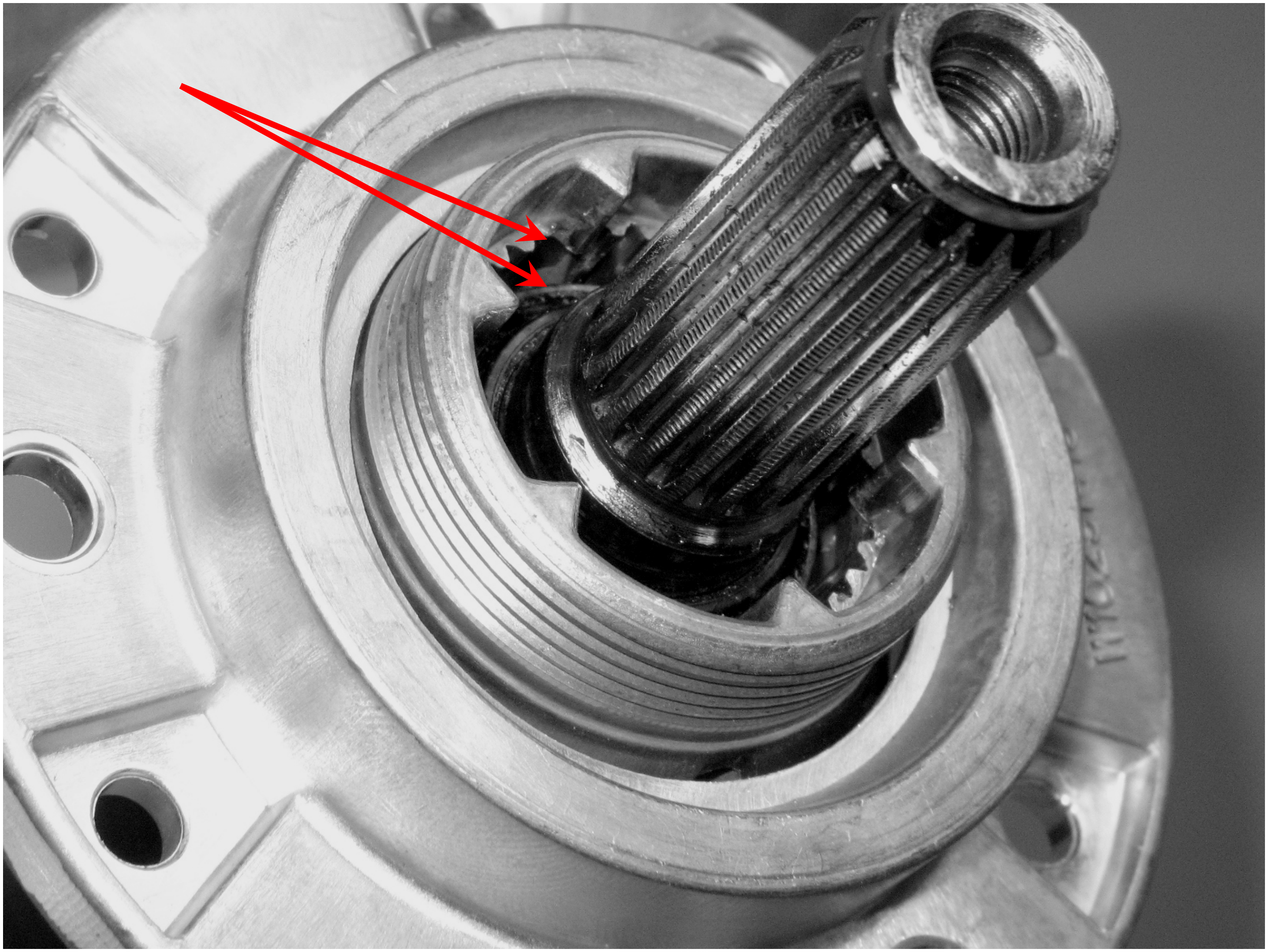


Re-installing Basket



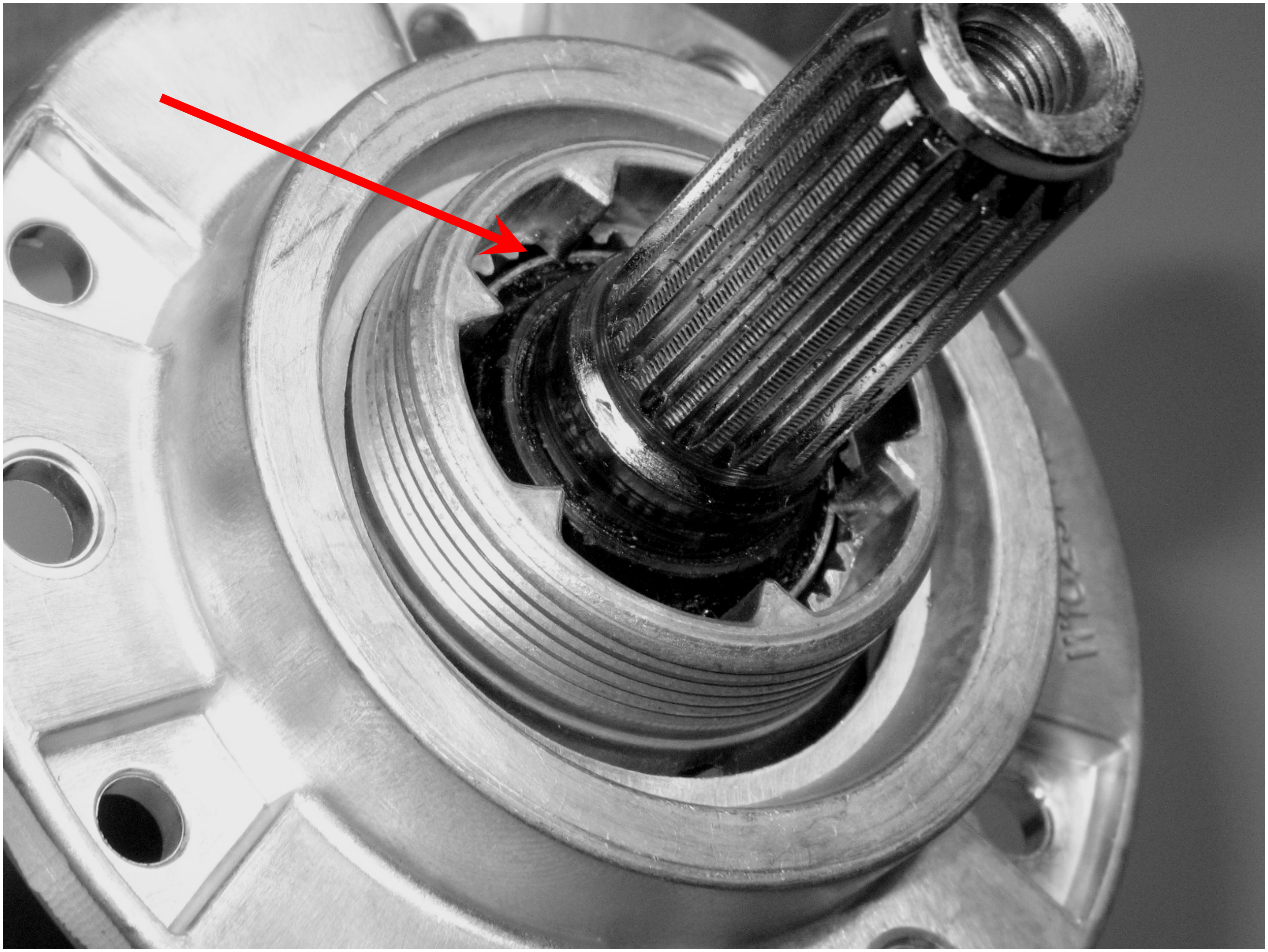


Re-installing Basket



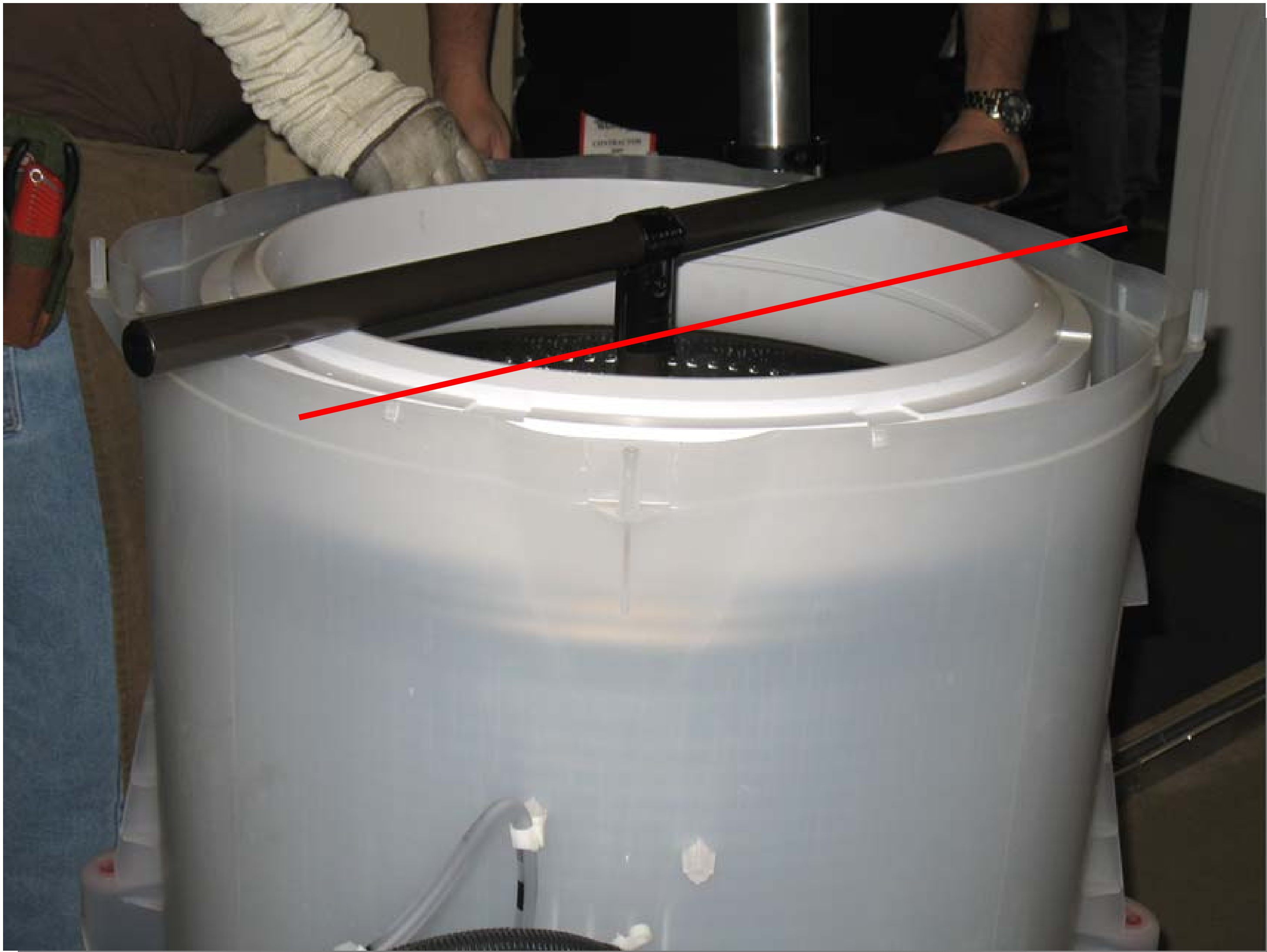
Unseated

Re-installing Basket



Seated

Re-installing Basket



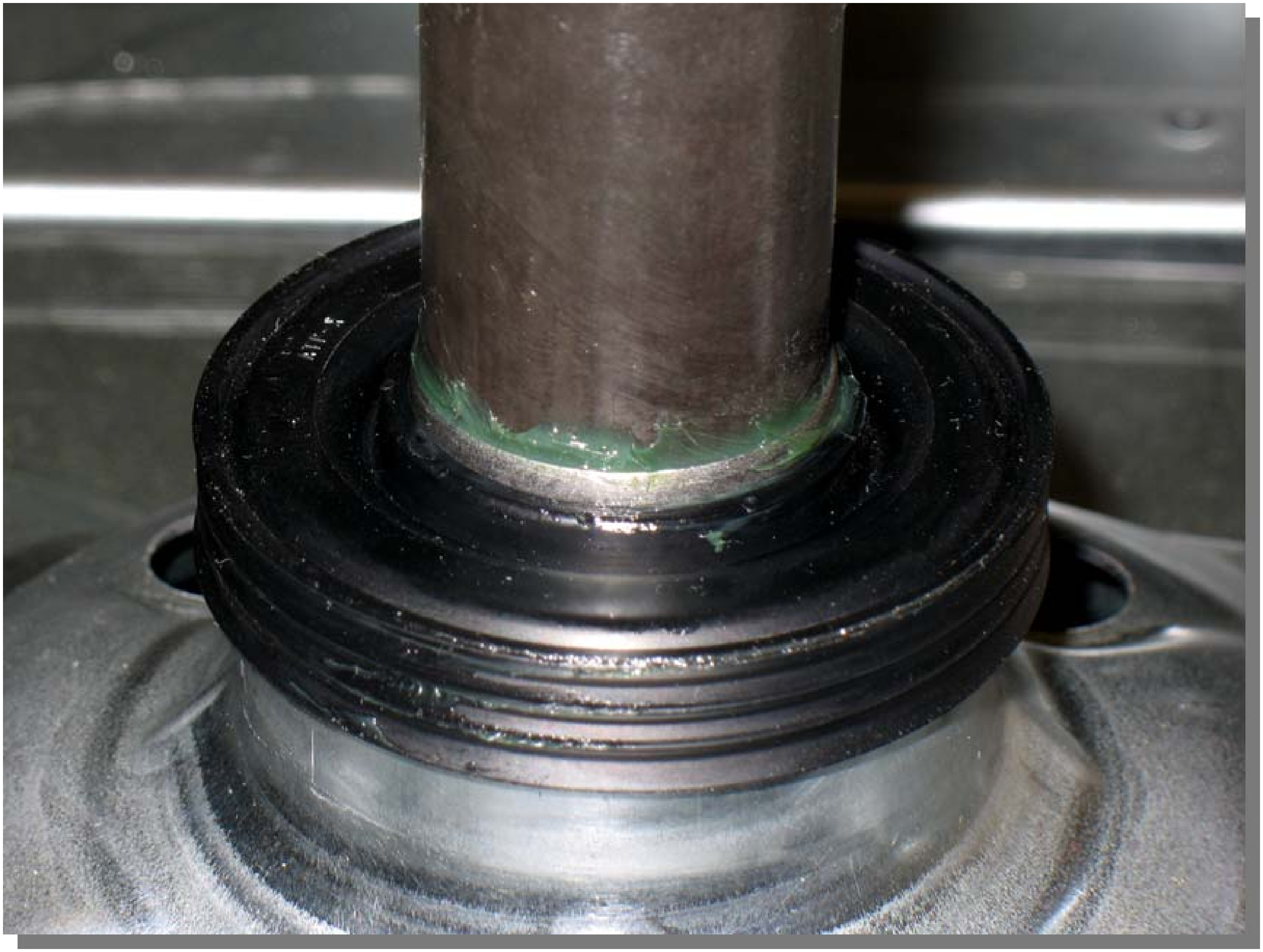
Seated

Re-installing Basket

Last Step, Firm Pull



Shaft Seal



- Grease
- Instructions

Stuck Impeller





Christmas Tree Clips

